DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. DMA-1437 X

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Routing Slip

To: ~~Director, Supply, Division~~ Div Date ~~July 18, 1951~~

To: Admin mgt Date 7-18-51

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CONTROLLED DOCUMENT

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

July 16, 1951

Q. E. C.

Memorandum

To: Administrative Management Division

Through: Director, Supply Division

From: Tungsten Branch

Subject: Application of George A. Westerdahl and Robert H. Powell
110 Parma Road DMA 1437X
Oak Ridge, Tennessee

Property

C & W mining claims in the Silver Mountain Mining District, Yavapai County, Arizona

Conclusions

1. Quantity of tungsten ore extracted from the C & W claims was only a few hundred pounds

2. Faulted zone containing the mineralized lenticular bodies was only 2 feet thick. The lenticular bodies were from 1 to 2 inches in thickness.

3. "No visible tungsten minerals remain in the face."

4. The applicants were not going to supervise the operation themselves.

Recommendation

Inasmuch as there is no ore in evidence at present and previous finds were small in quantity, there is no reason to expect to find ore in commercial quantities. The applicants were not planning to supervise the operation themselves and have no competitant operator contracted.

Attachment

George B. Holderer
Chief, Tungsten Branch

Approved:

Tom Lyon

Tom Lyon
Director, Supply Division

FILE COPY
SURNAME:

Holden
Jacoby

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

July 16, 1951

G. E. C.

Memorandum

To: Administrative Management Division

Through: Director, Supply Division

From: Tungsten Branch

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110 Farma Road DMA 1437X
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SIGNED 7/19
cc

Attachment

George B. Holderer
Chief, Tungsten Branch

Approved:

CHJacoby:bl
CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Field Team - Region VII
Files

Tom Lyon
Director, Supply Division

FILE COPY
SURNAME:

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

Holderer
Jacoby

July 16, 1951

Mr. George Westerdahl
110 Parma Road
Oak Ridge, Tennessee

In reply please refer to
DMA 1437X

Dear Mr. Westerdahl:

Your application dated May 31, 1951 for a loan to develop your C & W No. 2 claim has been carefully considered by the Defense Minerals Administration.

Inasmuch as the quantity of ore extracted from your C & W No. 2 claim has been only a few hundred pounds; the width of faulted zone containing the lenticular ore bodies is only two feet; the lenticular ore bodies themselves being only 1 to 2 inches in width; and that, "No visible tungsten minerals remain in the face." it is doubtful as to whether or not there is any possibility of finding ore in commercial quantities.

For the reasons enumerated above we regretfully deny your application.

Very truly yours,

Tom Lyon
Director, Supply Division

CHJacoby:bl

CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Field Team - Region VII
Files

July 16, 1951

Index of File sent to Adm. Management Division

DMA 1437X

1. 3 Copies of attached 7 pages of answers, Quit Claim Deed, Financial statements of Westerdahl and Powell, Report of Mineralogist Heineman, 3 assay reports, photostat of Ariz. Bureau of mines.

2. Letter to Mr. Bradley from George Westerdahl dated 7/9/51

3. Letter to Defense Minerals Administration from William Beck dated 5/29/51

GEORGE A. WESTERDAHL
MINING ENGINEER
110 PARMA ROAD
OAK RIDGE, TENN.

7-9-51

Bureau Mines & Minerals Exploration
RECEIVED
JUL 1 0 1951
LANDON F. STROBEL
Executive Secretary

Mr. P. R. Bradley, Chief Tungsten Branch.
United States
Department of the Interior,
Washington, D. C.

Dear Mr. P. R. Bradley:------

Subject DMA 1437X Re. Exploration Loan

Black Butte Claims.

Permit me to call to your attention a letter I received from your Mr. Landon F. Strobel, Listing my application for a Loan on the Black Butte Claims.

My Mining claim listed in the loan application is the C & W Tungsten claim No.1. The Black Butte claims are in a different mining district and are Manganese carrying traces of tungsten but they have nothing to do with my claims or holdings in that locality.

Kindly make proper correction in this matter,

I thank y ou,

Sincerely,

George A. Westerdahl

George A. Westerdahl.

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF MINES
Room 1. Federal Building
Knoxville, Tennessee

May 29, 1951

DMA 1459X

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

Gentlemen:

There are enclosed four copies of Form MF-103 for aid for an Exploration Project, with supplementing data and certain exhibits pertinent thereto. This application was presented at the DMA Field Office by George A. Westerdahl and Robert H. Powell of Oak Ridge, Tennessee. The property which they wish to explore for tungsten is located in Arizona.

Very truly yours,

Wm A Beck

Wm. A. BECK, for R. A. LAURENCE
Executive Officer, DMA Field Team
Region VII

FOR VICTORY
BUY UNITED STATES WAR BONDS AND STAMPS

TO: UNITED STATES DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
c/o DMA Field Office
Room 13
Post Office Building
Knoxville, Tennessee
Mr. Robert Laurence, Executive Officer

May 26, 1951.

We herewith submit four (4) signed copies of application form MF-103 for aid for an Exploration Project pursuant to Mineral Order 5, under Defense Production Act of 1950. Attached thereto is the supplementing data and certain exhibits pertinent thereto.

Yours very truly,

George A. Westerdahl

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Enclosures: A, B, C, D, E
Photostat of Deed to R. H. Powell

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1437X

Date received 5-31-51

Participation

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 26, 1951

Estimated cost $12,000 ow

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Arizona

Date of filing MF-100

DMA Docket Number, if available 1437X

INSTRUCTIONS

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

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

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

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

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

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

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

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

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

By George A. Westerdahl
(Signature of authorized official)

(Name of company)

May 26, 1951.
(Date)

Robert H. Powell
(Title)

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

*Same as footnote on page 1.

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

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Attention is called to the fact that the above applicants have not submitted form MF-100, and the following are the answers to questions stated in form MF-103.

1. Joint Owners, undivided one-half interest each in C&W #2 claim.

   George A. Westerdahl
   110 Parma Road
   Oak Ridge, Tennessee

   Robert H. Powell
   510 New York Avenue
   Oak Ridge, Tennessee

2. No partnership, ownership is as per above.

3. Question not applicable.

4-A. Westerdahl, at present Chemist at Oak Ridge National Laboratory, Oak Ridge, Tennessee, owned and operated mining properties, directly and indirectly for the past twenty-five years. From 1942 - 1943, employed with Bureau of Mines in Metallurgical Laboratory; 1943 - 1944 Manganese Ore Company, Henderson, Nevada, as Chemist; 1944 - 1947 employed as Chemist, Tennessee Eastman Company, Manhattan Engineering Project, Oak Ridge, Tennessee; 1947 to current date, employed as Chemist, Oak Ridge National Laboratory.

4-B. Powell, at present Senior Chemist at Oak Ridge National Laboratory, age 42, has had Mining and Geological experience in development of Geochemical data, and in development, operation and ownership of working interests in deep wells for natural gas (9,000 feet). Owns working interest in ten productive deep gas wells at Terra Alta, West Virginia, and in approximately 12,000 acres undeveloped gas territory at the same vicinity; owns and helped develop five productive shallow wells in Pennsylvania, and owns a working interest in the future development of approximately 12,000 acres of gas territory in Southwestern Pennsylvania. Powell has discovered and is developing the mining of an unusual and new graphite discovery in North Carolina. Powell is actively engaged in Research Chemistry at Oak Ridge National Laboratory, and at the same time continues his geologic and mining interests.

4-C. In answer to question 4-B (your number) no selection has been made yet on an overseer or manager of the project, but a tentative offer has been made to Mr. W. L. Palmer, Castle Hot Springs, Arizona.

5. Applicants are owners of the property. George A. Westerdahl is the original locator, owns one-half interest. Robert H. Powell, owner of one-half interest by purchase. (See photostat of deed from W. L. Palmer.)

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

6. No encumbrances of any kind or character.

7. Question not applicable.

8. Current financial statement submitted by each applicant and attached hereto elsewhere.

9. $3,000.00 as minimum. This amount is sufficient to pay applicants' cost of the project as detailed in question 23 when considered as 25% of the total project cost.

10A. Westerdahl's Camp, located three miles by trail from this Tungsten property in question, will be base camp for concentrating and fabricating purposes.

10B. The legal description of C&W Claim #2 is described in C&W Mining Claim (A-25), notice of location of record in Book 129 of Mines, page 411-412, Record of Yavapai County, Arizona which describes those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona.

"The C&W Claim #2 being approximately two miles in a Southerly direction from Hassock Springs, Arizona, marked by stone monument and location shaft, this location shaft being center of this claim, the other four corners are marked by stone monuments in the following manner: 750 feet North from discovery shaft to center end monument, 750 feet South to center end monument, and the East and West lines therefore being 1500 feet in length, each 300 feet from discovery monument Easterly and Westerly, this being a standard size lode claim having a total length of 1500 feet and a width of 600 feet, consisting of 19 acres, more or less, being duly recorded at Prescot, Yavapai County, Arizona, Book of Mines Book 129 - page 411-412."

This claim known as C&W #2 is one of several C&W claims situate in the Silver Mining District, Township #9 North, range to West, and it is 2 miles Southwesterly of Silver Mountain in Yavapai County, State of Arizona.

(A photostat of unrecorded deed dated February 23, 1951 from W. L. Palmer, party of the first part to Robert H. Powell, party of the second part, is attached to indicate Robert H. Powell's title to an undivided one-half interest in <u>both</u> claims #1 and 2.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

11. This property is and has always been known as the C&W Claim #2. Present owners are George A. Westerdahl and Robert H. Powell. Other owners that have owned one-half interest, exclusive of Westerdahl's, are Mr. W. L. Palmer, Castle Hot Springs, Arizona and Mr. N. Cothran, formerly of Castle Hot Springs, Arizona, whose present address is unknown.

12. This Tungsten C&W claim #2 is approximately two miles South of Tuscock Springs, Arizona, 32 miles Southwest to Morristown, Arizona, and it is 48 miles Northwest to Kirkland, Arizona. Santa Fe Railway is 32 miles distant at Morristown, Arizona and is 48 miles distant at Kirkland, Arizona. Roads fair to within 2 miles of the mine site.

13. Well water supply established for mining and milling purposes at Westerdahl's Mining Camp 3 miles by trail, from this Tungsten property in question. Electric Power available at Westerdahl's Mining Camp when Tungsten claim is opened for exploration. (See 14)

14. Good camp site, camp water only. One needs only tents and camping equipment, excellent all year around climate. No structures on mining property, but small mill and jig are in storage near Westerdahl's Mining Camp. Ref-103 question "State amount of power to be used, rate per hour or other cost, and source" -- applicants do not have available data to answer this question.

15. Ore to be shipped will probably contain 50 to 60% Tungsten Oxide (WO_3) in metal containers, from Wickenburg, Arizona, to the market at Tucson, Arizona. Can be concentrated at Westerdahl Camp. Ore is so high grade that only a rough jig separation is necessary.

16A. Exhibit A - letter of Robert L. Nelson, Mineralogist, University of Arizona dated May 8, 1939.

Westerdahl located this Tungsten in 1939. At that time Westerdahl was working a small placer operation Specimen Gulch, two miles to the Southwest of C&W #2, and this Tungsten Claim was not his major interest at that time. Westerdahl and Palmer mined only a few hundred pounds at a time and mined only the most accessible high-grade Ore. Representative Assay Certificates are shown by photostatic copies as Exhibits B, C, and D. (Of being assay of tailings only).

Your attention is called to publication entitled "Tungsten Deposits of Arizona" by Elmer D. Wilson, University of

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
810 New York Avenue
Oak Ridge, Tennessee

Arizona Bulletin, Arizona Bureau of Mines, Volume XII, No. 2, April 1, 1941, page 25-26, Bulletin 148, series 14, photostat of which is attached as Exhibit E for verification of this Tungsten prospect.

Palmer and Westerdahl extracted the high grade Scheelite and Ferberite by handtools (1940), packed it on burros and mules, concentrating it by hand jig, and sold concentrates at Tucson, Arizona.

16B. Nothing known about other adjoining properties than the C&W Claims. However, a Columbium (Niobium) and Tantalum Ore, Tapiolite, has been found on C&W Claim #1, which claim is not being included in this application. See University of Arizona Bulletin entitled "Minerals of Arizona" by F. W. Galbraith, Bureau of Mines Volume XII, #3, July 1, 1941, series 15, Bulletin 149, page 62 for "Tapiolite" (Fe Mn) $(Nb,Ta)_2O_6$ found on C&W Claim #1, adjoining C&W #2.

In 1942 Westerdahl discontinued general mining exploration and prospecting to work as chemist as per reported question number 4, as part of the 1942 War effort. Due to the then price of Tungsten, general restrictions imposed on independent miners as a part of the then regulations for mining, and due to a lack of capital, this Tungsten property has remained undeveloped during World War II. It is the applicant's belief that due to the present shortage of Tungsten, and the market conditions resulting therefrom, and the enhanced capital position of the applicants, and newly acquired information of a geological character obtained during summer prospecting in this vicinity during vacations (1949-1950) from Oak Ridge National Laboratory, plus the aid applied for will result in a very worth while project on C&W #2 Claim at the present time.

17A, B and C are not applicable.

18. This true fissure vein fits Lindgren's description of Tungsten veins as contained in his "Mineralization in the Bradshaw Mountains". Practically all the veins of Northeast strike in this district carry Wolframite. Several veins of this type occur in the vicinity of Tule Creek. The ore occurs in lenzes or shoots about 4 feet apart containing high grade Scheelite and Ferberite assaying from 20 to 30 percent WO, as taken from an openout ten feet in depth. This vein would be classified as a feeder vein and the main ore body is no doubt on the granite contact which is 200 feet away. Exploration of this vein and the Contact is what prompts us to believe funds will be well spent to open it up, for all the geology of this deposit falls in place.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

19. This is strictly a very high grade prospect, and as previously stated, owing to the fact that the feeder vein is high grade ore and all of the geology is right, it merits a full exploratory investigation.

20. The exploration will be conducted to follow a rich feeder vein to the ore body, which will be located along the granite contact about 200 feet distant, to prove an ore body of Scheelite and Ferberite.

21. We plan to opencut 12 feet in depth and 5 feet wide and 200 to 300 feet in length. It would not merit during the opening up of this deposit to move in heavy machinery, therefore, all machinery moved in would have to be packed on muleback, and could not weigh over 300#, as such machinery would have to be portable. Time to complete this prospect is from six months to one year.

22. [illegible] the feasibility of this prospect and a full account of the geology of the locality will be found in the book, under the chapter Mineral Deposits of the Smokies Mountains. The brief geological description of the Tungsten deposit in question:-------- The open cut workings are at an altitude of approximately 3500 feet, on a saddle between Walker and Lanty creeks. Here the prevailing formation is pre-Cambrian (Ocoee) schist, intruded on the South by a granite and invaded by large sill-like bodies of tourmaline-bearing pegmatite. In the vicinity of the claim a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally Northeast and dips about 60° Northwest. It surmounts a compact knoll, [illegible] high content of magnetite. This belt is cut at right angles by the Tungsten vein as a fault zone 2 feet in width and is marked by strong gouge in the hanging wall, which dips 60° Southeast, its walls show some mineralization. The ore bodies are lenticular in nature, with 1 or 6 inches of quartz and with massive Scheelite and Ferberite.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

23. A. Four Mexican laborers with board.

$800.00 per month for six months.....$4,800.00

B. One overseer at $250.00 per month for 6 mos. 1,500.00

C. Question not applicable.

D. Two tents and camping equipment for 5 persons.... 400.00

E.2 Ford tractor with blade, fresnel, cable winch attachment and trailer.....2,500.00

Portable compressor on two wheels, with hose, accessories, spare parts, one sinker and one drifter, bit assortments.....1,400.00

One utility pickup..... 600.00

Pack string and tenders..... ($100.00 a month for 6 months) 600.00

Two mineralite fluorescent ore sampling lights.. 200.00

F. No rental of equipment foreseen.

H. Hand tools, shovels, bars, sledges, simple jack and double jacks..... 70.00

I. No estimates available.

Total.....$12,070.00

(note: Have mill and jig for concentrating purposes at campsite.)

George A. Westerdahl
110 Parma Rd.
Oak Ridge, Tenn.

Robert H. Powell,
510 New York Ave.
Oak Ridge, Tenn.

24
First Month:----
Let purchase contract for equipment, itemized in question 23, for delivery to rail head at Morristown, Ariz.

Expenditure requirements about fifty percent ---------- $5720.00

Second Month.
Establish camp site at the mine, set-up equipment, move in supplies of gasoline, mdese, and powder.

Expenditure requirements about 10.4 percent ---------- 1256.00

Third Month.
Exploration by open-cut methods along the tungsten vein.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fourth Month.
After sufficient samples are extracted they will be packed by mule back transportation to Westerdahl's Camp, for appraisal and analyses.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fifth Month.
Continue to follow vein and sink on any promising ore shoots until reaching granite contact.
Expenditure requirements about 10.4 percent ---------- 1256.00

Sixth Month.
Cross-cutting on the granite contact.

Expenditure requirements about 10.4 percent ---------- 1256.00

QUIT-CLAIM DEED.

KNOW ALL MEN BY THESE PRESENTS:

That W. L. Palmer, the party of the first part, for and in consideration of the sum of ONE DOLLAR and other good and valuable considerations to him in hand paid by Robert H. Powell, the party of the second part, receipt thereof is hereby acknowledged, has granted, sold, remised and released and by these presents does grant, sell, remise, release and quit-claim unto the said party of the second part the following described mining property, to-wit:

> Those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona, being the C & H Mining Claim (A-25), notice of location of record in Book 129, of Mines Page 411-412, Record of Yavapai County, Arizona.
>
> It is understood that grantor only claims to own a half-interest in the above described mining claim.

TO HAVE and TO HOLD the said described mining property unto the party of the second part, his heirs and assigns forever.

WITNESS the hand of the grantor this 28th day of February, 1951.

W. L. Palmer

State of Arizona)
; ss.
County of Maricopa)

This instrument was acknowledged before me this 28th day of February, 1951, by W. L. Palmer.

My commission expires 6/23/54.

J. E. Russell
Notary Public.

George G. Westerfield
110 Pauma Rd
Oak Ridge, Tenn.

Richard N. Farrell
510 New York Ave
Oak Ridge, Tenn

The mineralogy of these deposits—garnet, epidote, quartz, specularite, scheelite, and powellite—indicates them to be of contact-metamorphic origin.

Similar deposits in schist are reported to occur on the Homestake and Eureka groups of claims in the area of Little San Domingo Wash, 8 miles east of Morristown. In late 1940 these groups were held by Messrs. Pachen, Kaler, and McMillian.

CASTLE CREEK REGION

BLACK BUTTE CLAIMS

The Black Butte group of two unpatented claims, held by W. L. Palmer, is a short distance east of Castle Creek and 27 miles by road northeast of Morristown. These claims, which were located in 1940, have been opened only by a shallow cut.

Walker Creek and other southward-flowing tributaries of Castle Creek have carved this area into shallow canyons and sharp ridges. The rocks exposed consist of andesitic flows, breccia, and tuff of prevailing northward dip, overlain on the ridges by thin soil.

The principal vein occurs within a fault fissure that strikes irregularly eastward and is traceable by float for a few hundred feet on the surface. It is intersected on the west by northward-trending fissures containing gray lime carbonate. This vein, which consists largely of black manganese oxide together with a little calcite and quartz, is 1½ to 2 feet wide where exposed. The manganese oxide shows glistening pseudomorphous cleavage faces which suggest that at least part of it was derived from manganiferous calcite. A qualitative test of the vein material by R. E. Heineman, of the Arizona Bureau of Mines, shows it to contain tungsten, and Mr. Palmer states[28] that an assay of it showed 43.8 per cent manganese, 1.23 per cent WO_3, and 15 per cent silica. The form in which this tungsten occurs is unknown, but S. G. Lasky, of the U.S. Geological Survey, suggests that at least part of it may be present as the mineral hollandite.[29]

C AND W CLAIMS

The C and W group of three unpatented claims, held by W. L. Palmer and G. A. Westerdahl, is in the southeastern part of T. 9 N., R. 2 W., about 2 miles southwest of Silver Mountain. This area is accessible by some 3 miles of trail from the end of a rough road that leads up Banty Creek for 4 miles north of Westerdahl's camp.

Since the location of these claims in 1940, G. A. Westerdahl and W. L. Palmer have worked them in a small way and produced a few hundred pounds of concentrates with a portable hand jig.

The workings are at an altitude of approximately 3,500 feet, on a saddle between Walker and Banty creeks. Here the prevailing

[28] Oral communication.
[29] Oral communication.

formation is pre-Cambrian sedimentary schist, intruded on the south by granite and invaded by large sill-like bodies of tourmaline-bearing pegmatite.

In the vicinity of the claims a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally northeastward and dips about 60° NW.; it strongly affects a compass needle, indicating high content of magnetite. This belt is cut at right angles by a fault zone about 2 feet wide and marked by strong gouge in the hanging wall, which dips 80° SE. Its walls show some sericitization. When visited in June, 1941, this fault zone had been opened by a pit 25 feet long by 20 feet deep from which lenticular bodies, 1 to 2 inches wide, of quartz with massive wolframite and scheelite are reported to have been mined. No visible tungsten minerals remained in the face.

MARICOPA COUNTY

CAVE CREEK DISTRICT

GENERAL FEATURES

The Cave Creek district, of northeastern Maricopa County, is in steep, irregular mountains that consist largely of pre-Cambrian schist and granite, intruded in places by younger granite and overlain on the north by mesa-forming volcanic rocks of Tertiary or Quaternary age.

This district contains deposits of gold, silver, copper, lead, tungsten, molybdenum, and vanadium.

GOLD CLIFF MINE

The Gold Cliff property of thirteen unpatented claims, held by the Gold Cliff Mining Company, is 5 miles by road, via the Dart Ranch, north of Cave Creek post office.

The northeastern portion of this property contains quartz veins from which, for many years, gold ore has been mined intermittently and concentrated in a stamp-gravity mill.

Three claims in the southwestern portion of the group contain the principal tungsten deposits. These deposits, well-known by 1913, were worked during the World War by the Pittsburgh Tungsten Company, but figures on their production are not available. In 1936 the group was leased to Jack Lemons who has produced several tons of ferberite concentrates with the aid of a small gravity plant.

Here slaty to sericitic gray pre-Cambrian schist, which strikes northeastward and dips northwestward at moderate angles, is intruded by a granitic stock that crops out over an east-west length of about a mile and a width of ¼ to ¾ mile. This granite has been extensively invaded and altered by pegmatite. The alteration consists largely of coarse sericite and quartz.

The area has been broken by several faults of undetermined displacement. Springs, important for local water supply, are associated with some of these faults.

George A. Westenhaver
110 Lorna Road
Oak Ridge, Tenn

Robert W. Farrell
510 New York Ave.

Financial Statement

~~To HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~
To U.S. Dept of Interior
Defense Minerals Adm.
Chemist: Oak Ridge National Lab.
Mining: Institute - Oak Ridge, etc.

Name Robert W. Farrell
Address 510 New York Ave
Oak Ridge, Tenn.

Character of Business

For the purpose of obtaining a line of credit with you not to exceed $ see application I hereby tender the following statement of my ~~business~~ affairs as of May 26, 1951, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS				LIABILITIES				
Cash in hand and banks		866	00	Notes Payable	To banks		none.	
Notes Receivable		none.			To others		none.	
Oak Ridge National Lab. - Journeyman Carbon Outside Con Co. / payable 6/51		960	00					
Accts. Receivable Current and Considered Good: For merchandise sold				Accounts Payable	For merchandise, not due	~	80	00
Others					For merchandise, past due			
Household effects ~~Merchandise~~ (indicate w[illegible] r replacement)	7	000	00		Others			
United States Bonds ~~or Notes~~	1	400	00					
Other Salable (Schedule B)								
Cash Value Life Insurance ($17,000.00 Ins. paid up)	8	330	00					
TOTAL QUICK				TOTAL CURRENT			80	00
Real Esate (Schedule A)	12	100	00	Real Estate Mortgages			none	
Machinery and tools $		—						
less depreciation Net		—						
Stocks and Bonds other than U.S. (Schedule C)		590	00	Other liabilities			none.	
Automobiles and trucks 1947 Buick.	1	384	89					
1949 Olds.	2	015	75					
Other Assets (Schedule D)								
Royalties from Terra Alta, W. Va. (5 mos - undistributed) ~	3	000	00	TOTAL LIABILITIES			80	00
				NET WORTH		37	566	64
TOTAL ASSETS	37	646	64	GRAND TOTAL	plus salary of mgr. 6,000.00 plus mineral royalties 31,000.00			

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL

SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED					RECONCILEMENT OF NET WORTH—ACCOUNT				
Net Sales for period					Net Worth close previous year				
Cost of goods or material, etc.					Net Profit or Loss for present period				
Gross Profit on sales					Other Additions: (Itemize)				
Selling and general expenses									
Proprietor's Salary									
Net Profit on sales					Adjusted Net Worth				
Add: Other Incove—Investments					Withdraways—Proprietor				
Interest and Discounts					Other Deductions: (Itemize)				
Recoveries on bad debts									
Deduct: Interest expense									
Bad debts charged off									
Depreciation/Depletion									
NET PROFIT OR LOSS FOR PERIOD $					PRESENT NET WORTH				

(over)

Have endorsed notes of others amounting to $ none Bonds, $ none

In present business 20 years. Carry $ 7000.00 insurance on merchandise and $ none

on buildings. Carry $ 48,000.00 (17,000.00 paid up) life insurance payable to wife, sister, & children.

Have pledged $ _____ of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
Whitetail Tavern Co. Pa.	12 A.	gas & oil	none	none	600
Whitetail Tavern Co.	2 A.	[illegible]	none	"	500
Cambria Co. Pa.	entirely in 12,000 A.	gas & oil leases	"	"	1,000
Tenn. & Va. W. Va.	interest in 16,000 A.	oil & gas leases	"	"	10,000.
Mining Claim N. Carolina.	28 A. (480)	Gold & mica	[illegible]	Value undetermined	
TOTALS					12,100

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

no.

REFERENCES

Name	Address	Name	Address
Edward C. Hamer Pres.	Second National Bank	Uniontown	Pa.
Hon. Judge John C. Morrow	Fayette Count Courts	Uniontown	Pa.
Col. Robert T. Kelly	Col. Kelly Natural Laboratory	Col. Kelly	Texas.
Dr. Harold B. Simmons	Dept. of Interior.	Washington	D.C.

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
	$ 1000. - Conf. Gas.	
	@ 590.	

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? no. Name and address of firm: _____
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? no.

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this 26th day of May 1951

Witness: _____ (Seal)

Financial Statement

~~To HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~

Name George A. Westerdahl

Address 110 Parua Rd. Oak Ridge. Tenn. Character of Business Chemist.

For the purpose of obtaining a line of credit with you not to exceed $_____ I hereby tender the following statement of my business as of _____, 19____, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS			LIABILITIES		
Cash in hand and banks		400	Notes Payable	To banks	NONE
Notes Receivable		365		To others	NONE
Savings Acc't		1 200			
Accts. Receivable Current and Considered Good — For merchandise sold			Accounts Payable	For merchandise, not due	100
Accts. Receivable Current and Considered Good — Other				For merchandise, past due	NONE
Merchandise (indicate whether cost or replacement) Household Goods	2	000		Others	
United States Bonds or Notes		200			
Other Salable (Schedule B)					
Cash Value Life Insurance none					
			TOTAL CURRENT		
TOTAL QUICK			Real Estate Mortgages		NONE
Real Esate (Schedule A)	4	800			
Machinery and tools $ 1200					
less depreciation 700 Net		500			
Stocks and Bonds other than U.S. (Schedule C)			Other liabilities		NONE
Automobiles and trucks 3	2	200			
Other Assets (Schedule D)					
			TOTAL LIABILITIES		100
			NET WORTH		11565
TOTAL ASSETS	11	665	GRAND TOTAL		11665

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL — SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED _____		RECONCILEMENT OF NET WORTH—ACCOUNT	
Net Sales for period		Net Worth close previous year	
Cost of goods or material, etc.		Net Profit or Loss for present period	
Gross Profit on sales		Other Additions: (Itemize)	
Selling and general expenses			
Proprietor's Salary			
Net Profit on sales		Adjusted Net Worth	
Add: Other Incove—Investments		Withdraways—Proprietor	
Interest and Discounts		Other Deductions: (Itemize)	
Recoveries on bad debts			
Deduct: Interest expense			
Bad debts charged off			
Depreciation/Depletion			
NET PROFIT OR LOSS FOR PERIOD $		PRESENT NET WORTH	

(over)

Have endorsed notes of others amounting to $ None Bonds, $ None

In present business years. Carry $ None insurance on merchandise and $ None

on buildings. Carry $ None life insurance payable to Geo. R.Z. Vorsch [illegible]

Have pledged $ None of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
7 [illegible]	[illegible]		None		[illegible]
[illegible]		None			[illegible]
TOTALS					

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

None

REFERENCES

Name	Address	Name	Address
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
		Yearly salary [illegible]

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? Name and address of firm:
   (Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? Recorded [illegible] (Seal)

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this day of 5-26 19 V

Witness: George (Seal)

Exhibit A

University of Arizona
TUCSON
COLLEGE OF MINES AND ENGINEERING

ARIZONA BUREAU OF MINES

May 9, 1939

Mr. G. A. Westerdahl,
Morristown, Arizona.

Dear Sir:

Your letter and sample dated May 2 (file #15743) have come.

This material is largely ferberite which is an iron tungstate. Some hematite (iron oxide) is also present. If you had a sufficient amount of this ore, it would be a tungsten ore.

Very truly yours,

Robt. E. Heineman

Robt. E. Heineman
Mineralogist.

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE EXPIRES
ROBERT E. HEINEMAN
DEC. 31, 1939
ARIZONA, U.S.A.

George J. Westerhold
110 Pomona Rd.
Oak Ridge Tenn

Robert W. Powell
510 New York
Oak Ridge,
Tenn

Lab. No. B

A. L. PELLEGRIN & SON
FORMERLY FOR 6 YEARS U. S. ASSAYERS
ASSAYERS AND CHEMISTS

TESTING FOR THE RARE METALS AND MINERALS, CYANIDE AND OTHER METALLURGICAL LABORATORY TESTS

339 SO. STONE AVE.
TUCSON, ARIZONA

ASSAY AND ANALYSIS CERTIFICATE

MR. Westerdahl (Fernstrom)

May 14th 1941

NO. OR MARKS	FIRE ASSAY—PER TON				CHEMICAL ANALYSIS -- PER CENT						
	Gold oz.	Val. at $	Silver oz.	Val. at	Copper	@	Lead	@		@	Total Value
3 lb Chr ore		$		$ WO3	=	40.50%					$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$

CHARGED $ 3.00

A. L. Pellegrin & Son. ASSAYERS

George A. Mantenfeldt
110 Pomona Road
Oak Ridge, Tenn

Robert M. Powell
510 Kerr First Ave
Oak Ridge Tenn

Exhibit C

E. A. JACOBS

CERTIFICATE OF ASSAY

REGISTERED ASSAYER

Cor. Main and Mesilla Sts.

Certificate No. 414-WO-3

TUCSON, ARIZONA June 27-1940 193

Sample Submitted by Mr. Herbert P. Krucker

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

SERIAL NO.	SAMPLE MARKED	OZS. PER TON ORE	VALUE PER TON $ ORE	OZS. PER TON ORE	PER CENT WET ASSAY	PER CENT WET ASSAY	PER CENT WET ASSAY
	1 Sack 32 pounds Tungsten Ore			33.2% WO_3			
	One Sack Thirty Two pounds Net Tungsten Ore Contain:- Thirty Three point Two percent Tungsten Trioxide						

Very Respectfully,

E. A. Jacobs

Charges $ 2.00

George A Westenhaver
110 Pawnee Road
Oak Ridge, Tenn

Richard W Powell
510 New York Ave
Oak Ridge, Tenn

Exhibit D

CERTIFICATE OF ASSAY

E. A. JACOBS

REGISTERED ASSAYER

Cor. Main and Mesilla Sts.

Certificate No. 422-W3 TUCSON, ARIZONA July 30 1940 193

Sample Submitted by Mr. Herbert F Krucker

SERIAL NO.	SAMPLE MARKED	GOLD OZS. PER TON ORE	GOLD VALUE PER TON ORE	SILVER OZS PER TON ORE	COPPER PER CENT WET ASSAY	LEAD PER CENT WET ASSAY	PER CENT WET ASSAY
			$				
	2 sacks 114-1/2 pounds net weight tungsten					9.8 % WO_3	
	Two sacks One Hundred Fourteen & one Half pounds tungsten						
	contain Nine point eight Tungsten Trioxide.						
	(Tailings)						

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

◆Gold Figured $20 per oz. Troy.

Very Respectfully,

E. A. Jacobs

Charges $ 3.50 sampling & assaying

George A. Westenhaver
110 Lorna Road
Oak Ridge, Tenn.

Robert N. Farwell
510 New York Ave
Oak Ridge, Tenn.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1439X

Date received 5-31-51

Participation

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 26, 1951

Estimated cost $ 12,000.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Arizona

Date of filing MF-100

DMA Docket Number, if available 1439X

INSTRUCTIONS

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

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

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

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

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

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

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

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

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

(Name of company)	By George A. Westerdahl (Signature of authorized official)
May 26, 1951 (Date)	Robert W. Tomell (Title)

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

*Same as footnote on page 1.

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

TO: UNITED STATES DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
c/o DMA Field Office
Room 13
Post Office Building
Knoxville, Tennessee
Mr. Robert Laurence, Executive Officer

May 26, 1951

We herewith submit four (4) signed copies of application form MF-103 for aid for an Exploration Project pursuant to Mineral Order 5, under Defense Production Act of 1950. Attached thereto is the supplementing data and certain exhibits pertinent thereto.

Yours very truly,

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Enclosures: A, B, C, D, E
Photostat of Deed to R. H. Powell

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Attention is called to the fact that the above applicants have not submitted form MF-100, and the following are the answers to questions stated in form MF-103.

1. Joint Owners, undivided one-half interest each in C&W #2 claim.

   George A. Westerdahl
   110 Parma Road
   Oak Ridge, Tennessee

   Robert H. Powell
   510 New York Avenue
   Oak Ridge, Tennessee

2. No partnership, ownership is as per above.

3. Question not applicable.

4-A. Westerdahl, at present Chemist at Oak Ridge National Laboratory, Oak Ridge, Tennessee, owned and operated mining properties, directly and indirectly for the past twenty-five years. From 1942 - 1943, employed with Bureau of Mines in Metallurgical Laboratory; 1943 - 1944 Manganese Ore Company, Henderson, Nevada, as Chemist; 1944 - 1947 employed as Chemist, Tennessee Eastman Company, Manhattan Engineering Project, Oak Ridge, Tennessee; 1947 to current date, employed as Chemist, Oak Ridge National Laboratory.

4-B. Powell, at present Senior Chemist at Oak Ridge National Laboratory, age 42, has had Mining and Geological experience in development of Geochemical data, and in development, operation and ownership of working interests in deep wells for natural gas (9,000 feet). Owns working interest in ten productive deep gas wells at Terra Alta, West Virginia, and in approximately 12,000 acres undeveloped gas territory at the same vicinity; owns and helped develop five productive shallow wells in Pennsylvania, and owns a working interest in the future development of approximately 12,000 acres of gas territory in Southwestern Pennsylvania. Powell has discovered and is developing the mining of an unusual and new graphite discovery in North Carolina. Powell is actively engaged in Research Chemistry at Oak Ridge National Laboratory, and at the same time continues his geologic and mining interests.

4-C. In answer to question 4-B (your number) no selection has been made yet on an overseer or manager of the project, but a tentative offer has been made to Mr. W. L. Palmer, Castle Hot Springs, Arizona.

5. Applicants are owners of the property. George A. Westerdahl is the original locator, owns one-half interest. Robert H. Powell, owner of one-half interest by purchase. (See photostat of deed from W. L. Palmer.)

QUIT-CLAIM DEED.

KNOW ALL MEN BY THESE PRESENTS:

That W. L. Palmer, the party of the first part, for and in consideration of the sum of ONE DOLLAR and other good and valuable considerations to him in hand paid by Robert H. Powell, the party of the second part, receipt hereof is hereby acknowledged, has granted, sold, remised and released and by these presents does grant, sell, remise, release and quit-claim unto the said party of the second part the following described mining property, to-wit:

> Those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona, being the Gold Mining Claim (A-25), notice of location of record in Book 129, of Mines Page 411-412, Record of Yavapai County, Arizona.
>
> It is understood that grantor only claims to own a half-interest in the above described mining claim.

TO HAVE and TO HOLD the said described mining property unto the party of the second part, his heirs and assigns forever.

WITNESS the hand of the grantor this 28th day of February, 1951.

W. L. Palmer

State of Arizona)
; ss.
County of Maricopa)

This instrument was acknowledged before me this 28th day of February, 1951, by W. L. Palmer.

My commission expires 6/23/54.

J. Russell
Notary Public.

George J. Meshadsh
110 Pomona Road
Oak Ridge - Tenn

Robert H. Powell
510 New York Ave
Oak Ridge, Tenn

Financial Statement

~~HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~
To U.S. Dept of Interior
Helene Minerals Adm.
Chemist Oak Ridge National Lab.

Name Robert H. Farrell

Address 510 Elgin York Ave
Oak Ridge, Tenn

Character of Business Mining Geologist, Author, etc.

For the purpose of obtaining a line of credit with you not to exceed $ see application I hereby tender the following statement of my ~~business~~ affairs as of May 26, 1951, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS				LIABILITIES				
Cash in hand and banks		866	00	Notes Payable	To banks	none		
Notes Receivable	none				To others	none		
Dobbs Note Pt. - Farmington (Cabin Orbit Claim) payable 6/51		960	00					
Accts. Receivable Current and Considered Good: For merchandise sold				Accounts Payable	For merchandise, not due	~	80.	00
Other					For merchandise, past due			
Merchandise (indicate ~~which for~~ replacement)	7	000	00		Others			
United States Bonds or Notes	1	400	00					
Other Salable (Schedule B)								
Cash Value Life Insurance (8 17,000 paid up)	8	330	00					
TOTAL QUICK				TOTAL CURRENT			80	00
Real Esate (Schedule A)	12	100	00	Real Estate Mortgages		none		
Machinery and tools $ less depreciation Net								
Stocks and Bonds other than U.S. (Schedule C)		590	00	Other liabilities		none		
Automobiles and trucks 1947 Pontiac.	1	384	89					
1949 Olds.	2	015	75					
Other Assets (Schedule D)								
Royalties from Sales of Vein (5 mos. - undistributed)	~ 3	000	00	TOTAL LIABILITIES			80	00
				NET WORTH		37	566	64
TOTAL ASSETS	37	646	64	GRAND TOTAL				

The sale of new $6000.00 bus. Assumed liabilities of $7,000.00 prop.

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL

SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED					RECONCILEMENT OF NET WORTH—ACCOUNT				
Net Sales for period					Net Worth close previous year				
Cost of goods or material, etc.					Net Profit or Loss for present period				
Gross Profit on sales					Other Additions: (Itemize)				
Selling and general expenses									
Proprietor's Salary									
Net Profit on sales					Adjusted Net Worth				
Add: Other Incove—Investments					Withdraways—Proprietor				
Interest and Discounts					Other Deductions: (Itemize)				
Recoveries on bad debts									
Deduct: Interest expense									
Bad debts charged off									
Depreciation/Depletion									
NET PROFIT OR LOSS FOR PERIOD $					PRESENT NET WORTH				

(over)

Have endorsed notes of others amounting to $ none Bonds, $ none

In present business 29 years. Carry $ 7000.00 insurance on ~~merchandise~~ household and $ rent

~~of buildings~~ Carry $ 48,000 (16,000 paid up) life insurance payable to wife, sister, and children.

Have pledged $ none of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
Wheeler Twp. Fayette Co. Pa	12 A	gas land	none	none	$600.00
Wheeler Twp. " " "	2 A	Cleared mountain land - building lot	"	"	500.00
Ambrose Co. Pa.	interest in 12,000 A	gas and oil	"	"	1,000.00
Terra Alta, W. Va	interest in 16,000 A	gas and oil	"	"	10,000.00
Murray Lones McCrobie	28 A 48 A	Gold & mining gas & stock	Value not determined		$12,100
TOTALS					

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

no.

REFERENCES

Name	Address	Name	Address
Edward C. Homer - Pres.	Second National Bank	- Uniontown	Pa.
(Res) Judge John C. Morrow	- Fayette County Courts	- Uniontown	Pa.
Dr. Myron T. Kelley	- Oak Ridge National Laboratory	- Oak Ridge	Tenn.
Dr. Harold Bachman	- Dept of Interior	- Washington	D.C.

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
	$1100 Cont Gas	
	@ 590	

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? no Name and address of firm:
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? no

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this 26th. day of May 1951

Witness: Ford H. Powell (Seal)

Financial Statement

~~HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~

Name George A. Westerdahl

Address 110 Parma Rd. Oak Ridge. Tenn. Character of Business Chemist.

For the purpose of obtaining a line of credit with you not to exceed $_____ I hereby tender the following statement of my business as of _____, 19____, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS			LIABILITIES		
Cash in hand and banks		400	Notes Payable	To banks	NONE
Notes Receivable		365		To others	NONE
Savings Acc't		1 200			
Accts. Receivable Current and Considered Good — For merchandise sold			Accounts Payable	For merchandise, not due	100
Accts. Receivable Current and Considered Good — Other				For merchandise, past due	NONE
Merchandise (indicate whether cost or replacement) Household Goods	2	000		Others	
United States Bonds or Notes		200			
Other Salable (Schedule B)					
Cash Value Life Insurance none					
			TOTAL CURRENT		
TOTAL QUICK			Real Estate Mortgages		NONE
Real Esate (Schedule A)	4	800			
Machinery and tools $ 1200					
less depreciation 700 Net		500			
Stocks and Bonds other than U.S. (Schedule C)			Other liabilities		NONE
Automobiles and trucks 3	2	200			
Other Assets (Schedule D)					
			TOTAL LIABILITIES		100
			NET WORTH		11565
TOTAL ASSETS	11	665	GRAND TOTAL		11665

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL

SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED _____		RECONCILEMENT OF NET WORTH—ACCOUNT	
Net Sales for period		Net Worth close previous year	
Cost of goods or material, etc.		Net Profit or Loss for present period	
Gross Profit on sales		Other Additions: (Itemize)	
Selling and general expenses			
Proprietor's Salary			
Net Profit on sales		Adjusted Net Worth	
Add: Other Incove—Investments		Withdraways—Proprietor	
Interest and Discounts		Other Deductions: (Itemize)	
Recoveries on bad debts			
Deduct: Interest expense			
Bad debts charged off			
Depreciation/Depletion			
NET PROFIT OR LOSS FOR PERIOD $		PRESENT NET WORTH	

(over)

Have endorsed notes of others amounting to $ None Bonds, $ None

In present business _____ years. Carry $ None insurance on merchandise and $ None

on buildings. Carry $ 14000. life insurance payable to Mrs. P.Z. Westcott Jr (wife)

Have pledged $ None of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
7 Landing Circle	100		None		None
Westcott's Landing Corp	75	None	"		None
TOTALS					

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

None

REFERENCES

Name	Address	Name	Address
V. L. Palmer	Castle Hot Springs, Ariz.		
G. D. Lucas	5913 Lake Shore Drive, Knoxville, Tenn.		
Dodge Reddick & Co.	(credit) Atlanta, Ga.		

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
		Yearly salary $1000 gross

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? _____ Name and address of firm: _____
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? Westcott's Corp, Ariz. (wife)

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this _____ day of 5-26 19 V1

Witness: George A Westcott Jr (Seal)

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

6. No encumbrances of any kind or character.

7. Question not applicable.

8. Current financial statement submitted by each applicant and attached hereto elsewhere.

9. $3,000.00 as minimum. This amount is sufficient to pay applicants' cost of the project as detailed in question 23 when considered as 25% of the total project cost.

10A. Westerdahl's Camp, located three miles by trail from this Tungsten property in question, will be base camp for concentrating and fabricating purposes.

10B. The legal description of C&W Claim #2 is described in C&W Mining Claim (A-25), notice of location of record in Book 129 of Mines, page 411-412, Record of Yavapai County, Arizona which describes those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona.

"The C&W Claim #2 being approximately two miles in a Southerly direction from Tussock Springs, Arizona, marked by stone monument and location shaft, this location shaft being center of this claim, the other four corners are marked by stone monuments in the following manner: 750 feet North from discovery shaft to center end monument, 750 feet South to center end monument, and the East and West lines therefore being 1500 feet in length, each 300 feet from discovery monument Easterly and Westerly, this being a standard size lode claim having a total length of 1500 feet and a width of 600 feet, consisting of 19 acres, more or less, being duly recorded at Prescot, Yavapai County, Arizona, Book of Mines Book 129 - page 411-412."

This claim known as C&W #2 is one of several C&W claims situate in the Silver Mining District, Township #9 North, range to West, and it is 2 miles Southwesterly of Silver Mountain in Yavapai County, State of Arizona.

(A photostat of unrecorded deeds dated February 28, 1951 from W. L. Palmer, party of the first part to Robert H. Powell, party of the second part, is attached to indicate Robert H. Powell's title to an undivided one-half interest in <u>both</u> claims #1 and 2.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

11. This property is and has always been known as the C&W Claim #2. Present owners are George A. Westerdahl and Robert H. Powell. Other owners that have owned one-half interest, exclusive of Westerdahl's, are Mr. W. L. Palmer, Castle Hot Springs, Arizona and Mr. N. Cothran, formerly of Castle Hot Springs, Arizona, whose present address is unknown.

12. This Tungsten C&W claim #2 is approximately two miles South of Tussock Springs, Arizona, 32 miles Southwest to Moristown, Arizona, and it is 48 miles Northwest to Kirkland, Arizona. Santa Fe Railway is 32 miles distant at Moristown, Arizona and is 48 miles distant at Kirkland, Arizona. Roads fair to within 2 miles of the mine site.

13. Well water supply sufficient for mining and milling purposes at Westerdahl's Mining Camp 3 miles by trail, from this Tungsten property in question. Electric Power available at Westerdahl's Mining Camp when Tungsten claim is opened for exploration. (See 14)

14. Good camp site, camp water only. One needs only tents and camping equipment, excellent all year around climate. No structures on mining property, but small mill and jig are in storage near Westerdahl's Mining Camp. MF-103 question "State amount of power to be used, rate per hour or other cost, and source" -- applicants do not have available data to answer this question.

15. Ore to be shipped as concentrates 50 to 60% Tungsten Oxide (WO_3) in metal containers, from Wickenburg, Arizona, to the market at Tucson, Arizona. Can be concentrated at Westerdahl Camp. Ore is so high grade that only a rough jig separation is necessary.

16A. Exhibit A - letter of Robert E. Heineman, Mineralogist, University of Arizona dated May 8, 1939.

Westerdahl located this Tungsten in 1939. At that time Westerdahl was working a small placer operation Specimen Gulch, two miles to the Southwest of C&W #2, and this Tungsten Claim was not his major interest at that time. Westerdahl and Palmer mined only a few hundred pounds at a time and mined only the most accessible high-grade Ore. Representative Assay Certificates are shown by photostatic copies as exhibits B, C, and D. (D being assay of tailings only).

Your attention is called to publication entitled "Tungsten Deposits of Arizona" by Eldred D. Wilson , University of

Exhibit A

University of Arizona
TUCSON
COLLEGE OF MINES AND ENGINEERING

ARIZONA BUREAU OF MINES

May 8, 1939

Mr. G. A. Westerdahl,
Morristown, Arizona.

Dear Sir:

Your letter and sample dated May 2 (file #15743) have come.

This material is largely ferberite which is an iron tungstate. Some hematite (iron oxide) is also present. If you had a sufficient amount of this ore, it would be a tungsten ore.

Very truly yours,

Robt. E. Heineman

Robt. E. Heineman
Mineralogist.

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE EXPIRES
ROBERT E. HEINEMAN
DEC. 31, 1939
ARIZONA, U.S.A.

George A Niedenfuhr
110 Pauma Road
Oak Ridge, Tenn.

Robert W Powell
510 New York Ave
Oak Ridge Tenn

A. L. PELLEGRIN & SON
FORMERLY FOR 6 YEARS U. S. ASSAYERS
ASSAYERS AND CHEMISTS

TESTING FOR THE RARE METALS AND MINERALS, CYANIDE AND OTHER METALLURGICAL LABORATORY TESTS

339 SO. STONE AVE.
TUCSON, ARIZONA

Lab. No. B

ASSAY AND ANALYSIS CERTIFICATE

MR. Westerdahl (Fernstrom)

May 14th 1941

NO. OR MARKS	FIRE ASSAY—PER TON				CHEMICAL ANALYSIS -- PER CENT						
	Gold oz.	Val. at $	Silver oz.	Val. at $	Copper	@	Lead	@		@	Total Value
36 lbs ore		$		$ WO3	=	40.50%					$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$

CHARGES $3.00

A. L. Pellegrin & son. ASSAYERS

George A. Mackenzie
110 Pomona Road
Oak Ridge, Tenn

Robert W. Worrell
510 New York Ave
Oak Ridge, Tenn

Exhibit C

E. A. JACOBS

CERTIFICATE OF ASSAY

Cor. Main and Mesilla Sts.

REGISTERED ASSAYER

Certificate No. 414-WO-3

TUCSON, ARIZONA June 27-1940 193

Sample Submitted by Mr. Herbert P. Krucker

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

SERIAL NO.	SAMPLE MARKED	GOLD		SILVER								PER CENT WET ASSAY
		OZS. PER TON ORE	VALUE PER TON ORE	OZS. PER TON ORE	PER CENT WET ASSAY	PER CENT WET ASSAY						
	1 Sack 32 pounds Tungsten Ore 33.2% WO_3											
	One Sack Thirty Two pounds Net Tungsten Ore Contain:- Thirty Three point Two percent Tungsten Trioxide											

Very Respectfully,

E. A. Jacobs

Charges $ 2.00

George A. Westbrook
110 Pawnee Road
Oak Ridge, Tenn

Robert W. Powell
510 New York Ave
Oak Ridge, Tenn

Exhibit D

CERTIFICATE OF ASSAY

E. A. JACOBS

REGISTERED ASSAYER

Cor. Main and Mesilla Sts.

Certificate No. 422-803 TUCSON, ARIZONA July 30 1940 193

Sample Submitted by Mr. Herbert F Krucker

SERIAL NO.	SAMPLE MARKED	GOLD OZS. PER TON ORE	GOLD VALUE PER TON ORE	SILVER OZS PER TON ORE	COPPER PER CENT WET ASSAY	LEAD PER CENT WET ASSAY	PER CENT WET ASSAY
			$				
	2 sacks 114-1/2 pounds net weight tungsten -9.8 % WO_3						
	Two sacks One Hundred Fourteen & one Half pounds tungsten contain Nine point eight Tungsten Trioxide.						
	(Tailings)						

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

◆Gold Figured $20 per oz. Troy.

Very Respectfully,

E. A. Jacobs

Charges $ 3.50 sampling & assaying

George A. Mecklenburg
110 Farris Road
Oak Ridge, Tenn.

Roland H. Farrell
518 New York Ave
Oak Ridge, Tenn.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Arizona Bulletin, Arizona Bureau of Mines, Volume XII, No. 2, April 1, 1941, page 25-26, Bulletin 148, series 14, photostat of which is attached as Exhibit E for verification of this Tungsten prospect.

Palmer and Westerdahl extracted the high grade Scheelite and Ferberite by handtools (1940), packed it on burros and mules, concentrating it by hand jig, and sold concentrates at Tucson, Arizona.

16B. Nothing known about other adjoining properties than the C&W Claims. However, a Columbium (Niobium) and Tantalum Ore, Tapiolite, has been found on C&W Claim #1, which claim is not being included in this application. See University of Arizona Bulletin entitled "Minerals of Arizona" by F. W. Galbraith, Bureau of Mines Volume X11, #3, July 1, 1941, series 15, Bulletin 149, page 62 for "Tapiolite" (Fe Mn) $(Nb,Ta)_2O_6$ found on C&W Claim #1, adjoining C&W #2.

In 1942 Westerdahl discontinued general mining exploration and prospecting to work as chemist as per reported question number 4, as part of the 1942 War effort. Due to the then price of Tungsten, general restrictions imposed on independent miners as a part of the then regulations for mining, and due to a lack of capital, this Tungsten property has remained undeveloped during World War II. It is the applicant's belief that due to the present shortage of Tungsten, and the market conditions resulting therefrom, and the enhanced capital position of the applicants, and newly acquired information of a geological character obtained during summer prospecting in this vicinity during vacations (1949-1950) from Oak Ridge National Laboratory, plus the aid applied for will result in a very worth while project on C&W #2 Claim at the present time.

17A, B and C are not applicable.

18. This true fissure vein fits Lindgren's description of Tungsten veins as contained in his "Mineralization in the Bradshaw Mountains". Practically all the veins of Northeast strike in this district carry Wolframite. Several veins of this type occur in the vicinity of Tule Creek. The ore occurs in lenzes or shoots about 4 feet apart containing high grade Scheelite and Ferberite assaying from 20 to 30 percent WO_3 as taken from an opencut ten feet in depth. This vein would be classified as a feeder vein and the main ore body is no doubt on the granite contact which is 200 feet away. Exploration of this vein and the Contact is what prompts us to believe funds will be well spent to open it up, for all the geology of this deposit falls in place.

The mineralogy of these deposits—garnet, epidote, quartz, specularite, scheelite, and powellite—indicates them to be of contact-metamorphic origin.

Similar deposits in schist are reported to occur on the Homestake and Eureka groups of claims in the area of Little San Domingo Wash, 8 miles east of Morristown. In late 1940 these groups were held by Messrs. Pachen, Kaler, and McMillian.

CASTLE CREEK REGION

BLACK BUTTE CLAIMS

The Black Butte group of two unpatented claims, held by W. L. Palmer, is a short distance east of Castle Creek and 27 miles by road northeast of Morristown. These claims, which were located in 1940, have been opened only by a shallow cut.

Walker Creek and other southward-flowing tributaries of Castle Creek have carved this area into shallow canyons and sharp ridges. The rocks exposed consist of andesitic flows, breccia, and tuff of prevailing northward dip, overlain on the ridges by thin soil.

The principal vein occurs within a fault fissure that strikes irregularly eastward and is traceable by float for a few hundred feet on the surface. It is intersected on the west by northward-trending fissures containing gray lime carbonate. This vein, which consists largely of black manganese oxide together with a little calcite and quartz, is 1½ to 2 feet wide where exposed. The manganese oxide shows glistening pseudomorphous cleavage faces which suggest that at least part of it was derived from manganiferous calcite. A qualitative test of the vein material by R. E. Heineman, of the Arizona Bureau of Mines, shows it to contain tungsten, and Mr. Palmer states[28] that an assay of it showed 43.8 per cent manganese, 1.23 per cent WO_3, and 15 per cent silica. The form in which this tungsten occurs is unknown, but S. G. Lasky, of the U.S. Geological Survey, suggests that at least part of it may be present as the mineral hollandite.[29]

C AND W CLAIMS

The C and W group of three unpatented claims, held by W. L. Palmer and G. A. Westerdahl, is in the southeastern part of T. 9 N., R. 2 W., about 2 miles southwest of Silver Mountain. This area is accessible by some 3 miles of trail from the end of a rough road that leads up Banty Creek for 4 miles north of Westerdahl's camp.

Since the location of these claims in 1940, G. A. Westerdahl and W. L. Palmer have worked them in a small way and produced a few hundred pounds of concentrates with a portable hand jig.

The workings are at an altitude of approximately 3,500 feet, on a saddle between Walker and Banty creeks. Here the prevailing

[28]Oral communication.
[29]Oral communication.

formation is pre-Cambrian sedimentary schist, intruded on the south by granite and invaded by large sill-like bodies of tourmaline-bearing pegmatite.

In the vicinity of the claims a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally northeastward and dips about 60° NW.; it strongly affects a compass needle, indicating high content of magnetite. This belt is cut at right angles by a fault zone about 2 feet wide and marked by strong gouge in the hanging wall, which dips 80° SE. Its walls show some sericitization. When visited in June, 1941, this fault zone had been opened by a pit 25 feet long by 20 feet deep from which lenticular bodies, 1 to 2 inches wide, of quartz with massive wolframite and scheelite are reported to have been mined. No visible tungsten minerals remained in the face.

MARICOPA COUNTY

CAVE CREEK DISTRICT

GENERAL FEATURES

The Cave Creek district, of northeastern Maricopa County, is in steep, irregular mountains that consist largely of pre-Cambrian schist and granite, intruded in places by younger granite and overlain on the north by mesa-forming volcanic rocks of Tertiary or Quaternary age.

This district contains deposits of gold, silver, copper, lead, tungsten, molybdenum, and vanadium.

GOLD CLIFF MINE

The Gold Cliff property of thirteen unpatented claims, held by the Gold Cliff Mining Company, is 5 miles by road, via the Dart Ranch, north of Cave Creek post office.

The northeastern portion of this property contains quartz veins from which, for many years, gold ore has been mined intermittently and concentrated in a stamp-gravity mill.

Three claims in the southwestern portion of the group contain the principal tungsten deposits. These deposits, well-known by 1913, were worked during the World War by the Pittsburgh Tungsten Company, but figures on their production are not available. In 1936 the group was leased to Jack Lemons who has produced several tons of ferberite concentrates with the aid of a small gravity plant.

Here slaty to sericitic gray pre-Cambrian schist, which strikes northeastward and dips northwestward at moderate angles, is intruded by a granitic stock that crops out over an east-west length of about a mile and a width of ¼ to ¾ mile. This granite has been extensively invaded and altered by pegmatite. The alteration consists largely of coarse sericite and quartz.

The area has been broken by several faults of undetermined displacement. Springs, important for local water supply, are associated with some of these faults.

George A. Mitchell
110 Pocono Rd.
Oak Ridge, Tenn

Robert H. Powell
510 New York Ave
Oak Ridge, Tenn

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

19. This is strictly a very high grade prospect, and as previously stated, owing to the fact that the feeder vein is high grade ore and all of the geology is right, it merits a full exploratory investigation.

20. The exploration will be conducted to follow a rich feeder vein to the ore body, which will be located along the granite contact about 200 feet distant, to prove an ore body of Scheelite and Ferberite.

21. We plan to opencut 12 feet in depth and 6 feet wide and 200 to 300 feet in length. It would not merit during the opening up of this deposit to move in heavy machinery, therefore, all machinery moved in would have to be packed on muleback, and could not weigh over 300#, or such machinery would have to be portable. Time to complete this prospect is from six months to one year.

22. Lindgren spent many months in the vicinity of this prospect and a full account of the geology of the locality will be found in his book, under the chapter Mineral Deposits of the Bradshaw Mountains. The brief geological description of the Tungsten deposit in question:-------- The open cut workings are at an altitude of approximately 3500 feet, on a saddle between Walker and Banty creeks. Here the prevailing formation is pre-Cambrian (Yavapai) schist, intruded on the South by a granite and invaded by large sill-like bodies of tourmaline-bearing pegamatite. In the vicinity of the claim a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally Northeast and dips about 60° Northwest. It strongly affects a compass needle, indicating high content of magnetite. This belt is cut at right angles by the Tungsten vein as a fault zone 2 feet in width and is marked by strong gouge in the hanging wall, which dips 80° Southeast, its walls show some sericitization. The ore bodies are lenticular in nature, with 1 to 6 inches of quartz and with massive Scheelite and Ferberite.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

23. A. Four Mexican laborers with board.

$800.00 per month for six months.....$4,800.00

B. One overseer at $250.00 per month for 6 mos. 1,500.00

C. Question not applicable.

D. Two tents and camping equipment for 5 persons.... 400.00

E. 2 Ford[redacted]n tractors with blade, fresnel, cable wench attachment and trailer.....2,500.00

Portable Compressor on two wheels, with hose, accessories, spare parts, one sinker and one drifter, bit assortments.....1,400.00

One utility pickup..... 600.00

Pack string and tenders..... ($100.00 a month for 6 months) 600.00

Two mineralite fluorescent ore sampling lights.. 200.00

F. No rental of equipment foreseen.

H. Hand tools, shovels, bars, sledges, single jack and double jacks..... 70.00

I. No estimates available.

Total.....$12,070.00

(note: Have mill and jig for concentrating purposes at campsite.)

George A. Westerdahl
110 Parma Rd.
Oak Ridge, Tenn.

Robert H. Powell,
510 New York Ave.
Oak Ridge, Tenn.

24
First Month:----
Let purchase contract for equipment, itemized in question 23, for delivery to rail head at Morristown, Ariz.

Expenditure requirements about fifty percent ---------- $5720.00

Second Month.
Establish camp site at the mine, set-up equipment, move in supplies of gasoline, mdese, and powder.

Expenditure requirements about 10.4 percent ---------- 1256.00

Third Month.
Exploration by open-cut methods along the tungsten vein.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fourth Month.
After sufficient samples are extracted they will be packed by mule back transportation to Westerdahl's Camp, for appraisal and analyses.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fifth Month.
Continue to follow vein and sink on any promising ore shoots until reaching granite contact.
Expenditure requirements about 10.4 percent ---------- 1256.00

Sixth Month.
Cross-cutting on the granite contact.

Expenditure requirements about 10.4 percent ---------- 1256.00

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1439X

Date received 5-31-51

Participation

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 26, 1951

Estimated cost $12,000.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Arizona

Date of filing MF-100

DMA Docket Number, if available 1439X

INSTRUCTIONS

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

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

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

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

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

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

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

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

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

RECEIVED
MAY 31 1951
LINDSEY F. STINSON
RECORDING SECRETARY

By George A. Westerdahl
(Signature of authorized official)

(Name of company)

May 26, 1951
(Date)

President
(Title)

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

*Same as footnote on page 1.

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

TO: UNITED STATES DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
c/o DMA Field Office
Room 13
Post Office Building
Knoxville, Tennessee
Mr. Robert Laurence, Executive Officer

May 26, 1951.

We herewith submit four (4) signed copies of application form MF-103 for aid for an Exploration Project pursuant to Mineral Order 5, under Defense Production Act of 1950. Attached thereto is the supplementing data and certain exhibits pertinent thereto.

Yours very truly,

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Enclosures: A, B, C, D, E
Photostat of Deed to R. H. Powell

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Attention is called to the fact that the above applicants have not submitted form MF-100, and the following are the answers to questions stated in form MF-103.

1. Joint Owners, undivided one-half interest each in C&W #2 claim.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

2. No partnership, ownership is as per above.

3. Question not applicable.

4-A. Westerdahl, at present Chemist at Oak Ridge National Laboratory, Oak Ridge, Tennessee, owned and operated mining properties, directly and indirectly for the past twenty-five years. From 1942 - 1943, employed with Bureau of Mines in Metallurgical Laboratory; 1943 - 1944 Manganese Ore Company, Henderson, Nevada, as Chemist; 1944 - 1947 employed as Chemist, Tennessee Eastman Company, Manhattan Engineering Project, Oak Ridge, Tennessee; 1947 to current date, employed as Chemist, Oak Ridge National Laboratory.

4-B. Powell, at present Senior Chemist at Oak Ridge National Laboratory, age 42, has had Mining and Geological experience in development of Geochemical data, and in development, operation and ownership of working interests in deep wells for natural gas (9,000 feet). Owns working interest in ten productive deep gas wells at Terra Alta, West Virginia, and in approximately 12,000 acres undeveloped gas territory at the same vicinity; owns and helped develop five productive shallow wells in Pennsylvania, and owns a working interest in the future development of approximately 12,000 acres of gas territory in Southwestern Pennsylvania. Powell has discovered and is developing the mining of an unusual and new graphite discovery in North Carolina. Powell is actively engaged in Research Chemistry at Oak Ridge National Laboratory, and at the same time continues his geologic and mining interests.

4-C. In answer to question 4-B (your number) no selection has been made yet on an overseer or manager of the project, but a tentative offer has been made to Mr. W. L. Palmer, Castle Hot Springs, Arizona.

5. Applicants are owners of the property. George A. Westerdahl is the original locator, owns one-half interest. Robert H. Powell, owner of one-half interest by purchase. (See photostat of deed from W. L. Palmer.)

QUIT CLAIM DEED.

KNOW ALL MEN BY THESE PRESENTS:

That W. L. Palmer, the party of the first part, for and in consideration of the sum of ONE DOLLAR and other good and valuable considerations to him in hand paid by Robert H. Powell, the party of the second part, receipt whereof is hereby acknowledged, has granted, sold, remised and released and by these presents does grant, sell, remise, release and quit-claim unto the said party of the second part the following described mining property, to-wit:

> Those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona, being the C & W Mining Claim (A-25), notice of location of record in Book 129, of Mines Page 411-412, Record of Yavapai County, Arizona.
>
> It is understood that grantor only claims to own a half-interest in the above described mining claim.

TO HAVE and TO HOLD the said described mining property unto the party of the second part, his heirs and assigns forever.

WITNESS the hand of the grantor this 28th day of February, 1951.

W. L. Palmer

State of Arizona)
; ss.
County of Maricopa)

This instrument was ackonwledged before me this 28th day of February, 1951, by W. L. Palmer.

My commission expires 6/23/54.

J. E. Russell
Notary Public.

Financial Statement

~~To HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~

To U.S. Atty. of Interior
Defense Minerals Admin
Chemical Div. Oak Ridge Natl Lab.

Name Richard H. Powell
510 New York Ave.

Address Oak Ridge, Tenn.

Character of Business Mining Outlines, Contracts

For the purpose of obtaining a line of credit with you not to exceed $ see application I hereby tender the following statement of my ~~business~~ affairs as of May 26, 1951, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS				LIABILITIES				
Cash in hand and banks		866	00	Notes Payable	To banks		none	
Notes Receivable		none.			To others		none	
Oak Ridge Natl Lab. - Lounge Fl.		960	00					
(Carbon Carbide Corp. - payable 6/6/51)								
Accts. Receivable Current and Considered Good — For merchandise sold				Accounts Payable	For merchandise, not due	~	80	00
Other					For merchandise, past due			
Household & personal effects ~~Merchandise (including whether cost or~~ replacement)	7	000	00		Others			
United States Bonds ~~or Notes~~	1	400	00					
Other Salable (Schedule B)								
Cash Value Life Insurance	8	330	00					
($17,000 paid up)				TOTAL CURRENT			80	00
TOTAL QUICK				Real Estate Mortgages			none.	
Real Esate (Schedule A)	12	100	00					
Machinery and tools $								
less depreciation Net								
Stocks and Bonds other than U.S. (Schedule C)		590	00	Other liabilities			none.	
Automobiles and trucks 1947-Buick. 1949-Olds.	1	384	89					
	2	015	75					
Other Assets (Schedule D)								
Royalties from Tenn. Ala. W. Va.				TOTAL LIABILITIES			80	00
(Emp - undisclosed)	~3	000	00	NET WORTH		37	566	64
TOTAL ASSETS	37	646	64	GRAND TOTAL				

Plus salary of over $600 per mo. plus unsecured royalties of $4000.00 plus P.

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL — SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED					RECONCILEMENT OF NET WORTH—ACCOUNT				
Net Sales for period					Net Worth close previous year				
Cost of goods or material, etc.					Net Profit or Loss for present period				
Gross Profit on sales					Other Additions: (Itemize)				
Selling and general expenses									
Proprietor's Salary									
Net Profit on sales					Adjusted Net Worth				
Add: Other Incove—Investments					Withdrawals—Proprietor				
Interest and Discounts					Other Deductions: (Itemize)				
Recoveries on bad debts									
Deduct: Interest expense									
Bad debts charged off									
Depreciation/Depletion									
NET PROFIT OR LOSS FOR PERIOD $					PRESENT NET WORTH				

(over)

Have endorsed notes of others amounting to $ none Bonds, $ none.

In present business 20 years. Carry $ 7000 00 insurance on ~~merchandise~~ household effects and $ rent ~~on~~ buildings. Carry $ 48,000 00 (17,000.00 paid up) life insurance payable to wife, sister and children.

Have pledged $ none of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
Whatley Twp Fayette Co Pa	12 A.	gas land	none	none	600
Whatley Twp " " "	2 A	[illegible]	"	"	500
Ambrose Co. Pa	interest in 12,000 A	gas and [illegible]	"	"	1,000
Terra Alta, W Va.	interest in 1600 A	gas and [illegible]	"	"	10,000
Mining [illegible] N Carolina -	284 / 484	[illegible] mining [illegible]		- Value and statement	
TOTALS					$ 12,100

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

no.

REFERENCES

Name	Address	Name	Address
Edward C Hamer - Pres.	Second National Bank	Uniontown	Pa.
(Ret) Judge John C Morrow	Fayette Count Court	Uniontown	Pa.
Dr. Robert L Kelley	Oak Ridge National Laboratory	Oak Ridge	Tenn.
Dr. Harold Bannerman	Dept of Interior	Washington	D.C.

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
	$1000 Co of Pa. @ 590	

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? no. Name and address of firm: —
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? no

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this 26 day of [illegible] 1951

Witness: [illegible] (Seal)

Financial Statement

To HAMILTON NATIONAL BANK
Knoxville, Tennessee

Name George A. Westerdahl

Address 110 Parma Rd. Oak Ridge. Tenn. Character of Business Chemist.

For the purpose of obtaining a line of credit with you not to exceed $_____ I hereby tender the following statement of my business as of _____, 19____, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS			LIABILITIES		
Cash in hand and banks		400	Notes Payable	To banks	NONE
Notes Receivable		365		To others	NONE
Savings Acc't		1 200			
Accts. Receivable Current and Considered Good — For merchandise sold			Accounts Payable	For merchandise, not due	100
Accts. Receivable Current and Considered Good — Other				For merchandise, past due	NONE
Household Goods Merchandise (indicate whether cost or replacement)	2	000		Others	
United States Bonds or Notes		200			
Other Salable (Schedule B)					
Cash Value Life Insurance NONO					
			TOTAL CURRENT		
TOTAL QUICK			Real Estate Mortgages		NONE
Real Esate (Schedule A)	4	800			
Machinery and tools $ 1200					
less depreciation 700 Net		500			
Stocks and Bonds other than U.S. (Schedule C)			Other liabilities		NONE
Automobiles and trucks 3	2	200			
Other Assets (Schedule D)					
			TOTAL LIABILITIES		100
			NET WORTH		11565
TOTAL ASSETS	11	665	GRAND TOTAL		11665

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL — SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL
(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED _____		RECONCILEMENT OF NET WORTH—ACCOUNT	
Net Sales for period		Net Worth close previous year	
Cost of goods or material, etc.		Net Profit or Loss for present period	
Gross Profit on sales		Other Additions: (Itemize)	
Selling and general expenses			
Proprietor's Salary			
Net Profit on sales		Adjusted Net Worth	
Add: Other Incove—Investments		Withdraways—Proprietor	
Interest and Discounts		Other Deductions: (Itemize)	
Recoveries on bad debts			
Deduct: Interest expense			
Bad debts charged off			
Depreciation/Depletion			
NET PROFIT OR LOSS FOR PERIOD $		PRESENT NET WORTH	

(over)

Have endorsed notes of others amounting to $ None Bonds, $ None

In present business _____ years. Carry $ None insurance on merchandise and $ None

on buildings. Carry $ 14000. life insurance payable to Mrs. P.Z. Westerdahl (wife)

Have pledged $ None of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
7 Mining Claims	140		None		2000
Westerdahl's Mining Camp	10	House	"		2000
TOTALS					

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

None

REFERENCES

Name	Address	Name	Address
W. L. Palmer	Castle Hot Springs, Ariz.		
C. D. Susano	5513 Lake shore Drive, Knoxville, Tenn.		
Sears Roebuck & Co.	(credit) Atlanta, Ga.		

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
		Yearly salary $3000 gross

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? _____ Name and address of firm: _____
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? Westerdahls Camp, Ariz. (wife)

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this _____ day of 5-26 19 57

Witness: George A Westerdahl (Seal)

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

6. No encumbrances of any kind or character.

7. Question not applicable.

8. Current financial statement submitted by each applicant and attached hereto elsewhere.

9. $3,000.00 as minimum. This amount is sufficient to pay applicants' cost of the project as detailed in question 23 when considered as 25% of the total project cost.

10A. Westerdahl's Camp, located three miles by trail from this Tungsten property in question, will be base camp for concentrating and fabricating purposes.

10B. The legal description of C&W Claim #2 is described in C&W Mining Claim (A-25), notice of location of record in Book 129 of Mines, page 411-412, Record of Yavapai County, Arizona which describes those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona.

"The C&W Claim #2 being approximately two miles in a Southerly direction from Tussock Springs, Arizona, marked by stone monument and location shaft, this location shaft being center of this claim, the other four corners are marked by stone monuments in the following manner: 750 feet North from discovery shaft to center end monument, 750 feet South to center end monument, and the East and West lines therefore being 1500 feet in length, each 300 feet from discovery monument Easterly and Westerly, this being a standard size lode claim having a total length of 1500 feet and a width of 600 feet, consisting of 19 acres, more or less, being duly recorded at Prescott, Yavapai County, Arizona, Book of Mines Book 129 - page 411-412."

This claim known as C&W #2 is one of several C&W claims situate in the Silver Mining District, Township #9 North, Range [illegible] East, and it is 2 miles Southwesterly of Silver Mountain in Yavapai County, State of Arizona.

(A photostat of unrecorded deed dated February 28, 1951 from [illegible] L. Palmer, party of the first part to Robert H. Powell, party of the second part, is attached to indicate Robert H. Powell's title to an undivided one-half interest in both claims #1 and 2.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

11. This property is and has always been known as the C&W Claim #2. Present owners are George A. Westerdahl and Robert H. Powell. Other owners that have owned one-half interest, exclusive of Westerdahl's, are Mr. W. L. Palmer, Castle Hot Springs, Arizona and Mr. N. Cothran, formerly of Castle Hot Springs, Arizona, whose present address is unknown.

12. This Tungsten C&W claim #2 is approximately two miles South of Tussock Springs, Arizona, 32 miles Southwest to Morristown, Arizona, and it is 48 miles Northwest to Kirkland, Arizona. Santa Fe Railway is 32 miles distant at Morristown, Arizona and is 48 miles distant at Kirkland, Arizona. Roads fair to within 2 miles of the mine site.

13. Well water supply sufficient for mining and milling purposes at Westerdahl's Mining Camp 3 miles by trail, from this Tungsten property in question. Electric Power available at Westerdahl's Mining Camp when Tungsten claim is opened for exploration. (See 14)

14. Good camp site, camp water only. One needs only tents and camping equipment, excellent all year around climate. No structures on mining property, but small mill and jig are in storage near Westerdahl's Mining Camp. MF-103 question "State amount of power to be used, rate per hour or other cost, and source" -- applicants do not have available data to answer this question.

15. Ore to be shipped as concentrates 50 to 60% Tungsten Oxide (WO_3) in metal containers, from Wickenburg, Arizona, to the market at Tucson, Arizona. Can be concentrated at Westerdahl Camp. Ore is so high grade that only a rough jig separation is necessary.

16A. Exhibit A - letter of Robert E. Heineman, Mineralogist, University of Arizona dated May 8, 1939.

Westerdahl located this Tungsten in 1939. At that time Westerdahl was working a small placer operation Specimen Gulch, two miles to the Southwest of C&W #2, and this Tungsten Claim was not his major interest at that time. Westerdahl and Palmer mined only a few hundred pounds at a time and mined only the most accessible high-grade Ore. Representative assay certificates are shown by photostatic copies as exhibits B, C, and D. (D being assay of tailings only).

Your attention is called to publication entitled "Tungsten Deposits of Arizona" by Eldred D. Wilson, University of

Exhibit A

University of Arizona
TUCSON
COLLEGE OF MINES AND ENGINEERING

ARIZONA BUREAU OF MINES

May 8, 1939

Mr. G. A. Westerdahl,
Morristown, Arizona.

Dear Sir:

Your letter and sample dated May 2 (file #15743) have come.

This material is largely ferberite which is an iron tungstate. Some hematite (iron oxide) is also present. If you had a sufficient amount of this ore, it would be a tungsten ore.

Very truly yours,

Robt. E. Heineman

Robt. E. Heineman
Mineralogist.

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE EXPIRES
ROBERT E. HEINEMAN
DEC. 31, 1939
ARIZONA, U.S.A.

CERTIFICATE OF ASSAY

E. A. JACOBS

REGISTERED ASSAYER

Cor. Main and Mesilla Sts.

Certificate No. 414-WO-3 TUCSON, ARIZONA June 27-1940 193

Sample Submitted by Mr. Herbert P. Krucker

SERIAL NO.	SAMPLE MARKED	OZS. PER TON ORE	VALUE PER TON OF ORE	OZS. PER TON ORE	PER CENT WET ASSAY	PER CENT WET ASSAY	PER CENT WET ASSAY
	1 Sack 32 pounds Tungsten Ore			33.2% WO_3			
	One Sack Thirty Two pounds Net Tungsten Ore Contain:- Thirty Three point Two percent Tungsten Trioxide						

Very Respectfully,

E. A. Jacobs

Charges $

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

George A. Westerdahl
110 Logan
Oak Ridge, Tenn.

Robert J. Powell
510 New York Ave
Oak Ridge, Tenn

A. L. PELLEGRIN & SON
FORMERLY FOR 6 YEARS U. S. ASSAYERS
ASSAYERS AND CHEMISTS

TESTING FOR THE RARE METALS AND MINERALS, CYANIDE AND OTHER METALLURGICAL LABORATORY TESTS

339 SO. STONE AVE.
TUCSON, ARIZONA

Lab. No. B

ASSAY AND ANALYSIS CERTIFICATE

MR. Westerlahl (Fernstrom)

May 14th 1941

NO. OR MARKS	FIRE ASSAY—PER TON				CHEMICAL ANALYSIS -- PER CENT						
	Gold oz.	Val. at $	Silver oz.	Val. at	Copper	@	Lead	@		@	Total Value
36 lbs ore		$		$ WO_3	=	40.50%					$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$

CHARGED $3.00

A. L. Pellegrin & Son. ASSAYERS

Exhibit D

E. A. JACOBS

REGISTERED ASSAYER

CERTIFICATE OF ASSAY

Cor. Main and Mesilla Sts.

Certificate No. 422-W03

TUCSON, ARIZONA July 30 1940 193

Sample Submitted by Mr. Herbert F Krucker

SERIAL NO.	SAMPLE MARKED	GOLD OZS. PER TON ORE	GOLD VALUE PER TON ORE	SILVER OZS PER TON ORE	COPPER PER CENT WET ASSAY	LEAD PER CENT WET ASSAY	PER CENT WET ASSAY
			$				
	2 sacks 114-1/2 pounds net weight tungsten 9.8 % WO_3						
	Two sacks One Hundred Fourteen & one Half pounds tungsten contain Nine point eight Tungsten Trioxide.						
	(Tailings)						

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

*Gold Figured $20 per oz. Troy.

Very Respectfully,

E. A. Jacobs

Charges $ 3.50 sampling & assaying

George B. Mesterfeld
110 Forma Road
Oak Ridge, Tenn

Robert W. Powell
510 New York Ave
Oak Ridge, Tenn

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
810 New York Avenue
Oak Ridge, Tennessee

Arizona Bulletin, Arizona Bureau of Mines, Volume XII, No. 2, April 1, 1941, page 25-26, Bulletin 148, series 14, photostat of which is attached as Exhibit E for verification of this Tungsten prospect.

Palmer and Westerdahl extracted the high grade Scheelite and Ferberite by handtools (1940), packed it on burros and mules, concentrating it by hand jig, and sold concentrates at Tucson, Arizona.

16B. Nothing known about other adjoining properties than the C&W Claims. However, a Columbium (Niobium) and Tantalum Ore, Tapiolite, has been found on C&W Claim #1, which claim is not being included in this application. See University of Arizona Bulletin entitled "Minerals of Arizona" by F. W. Galbraith, Bureau of Mines Volume XII, 3, July 1, 1941, series 15, Bulletin 149, page 62 for "Tapiolite" (Fe Mn) $(Nb,Ta)_2O_6$ found on C&W Claim #1, adjoining C&W #2.

In 1942 Westerdahl discontinued general mining exploration and prospecting to work as chemist as per reported question number 4, as part of the 1942 War effort. Due to the then price of Tungsten, general restrictions imposed on independent miners as a part of the then regulations for mining, and due to a lack of capital, this Tungsten property has remained undeveloped during World War II. It is the applicant's belief that due to the present shortage of Tungsten, and the market conditions resulting therefrom, and the enhanced capital position of the applicants, and newly acquired information of a geological character obtained during summer prospecting in this vicinity during vacations (1949-1950) from Oak Ridge National Laboratory, plus the aid applied for will result in a very worth while project on C&W #2 Claim at the present time.

17A, B and C are not applicable.

18. This true fissure vein fits Lindgren's description of Tungsten veins as contained in his "Mineralization in the Bradshaw Mountains". Practically all the veins of Northeast strike in this district carry Wolframite. Several veins of this type occur in the vicinity of Tule Creek. The ore occurs in lenzes or shoots about 4 feet apart containing high grade Scheelite and Ferberite assaying from 20 to 30 percent WO_3 as taken from an opencut ten feet in depth. This vein would be classified as a feeder vein and the main ore body is no doubt on the granite contact which is 200 feet away. Exploration of this vein and the Contact is what prompts us to believe funds will be well spent to open it up, for all the geology of this deposit falls in place.

The mineralogy of these deposits—garnet, epidote, quartz, specularite, scheelite, and powellite—indicates them to be of contact-metamorphic origin.

Similar deposits in schist are reported to occur on the Homestake and Eureka groups of claims in the area of Little San Domingo Wash, 8 miles east of Morristown. In late 1940 these groups were held by Messrs. Pachen, Kaler, and McMillian.

CASTLE CREEK REGION

BLACK BUTTE CLAIMS

The Black Butte group of two unpatented claims, held by W. L. Palmer, is a short distance east of Castle Creek and 27 miles by road northeast of Morristown. These claims, which were located in 1940, have been opened only by a shallow cut.

Walker Creek and other southward-flowing tributaries of Castle Creek have carved this area into shallow canyons and sharp ridges. The rocks exposed consist of andesitic flows, breccia, and tuff of prevailing northward dip, overlain on the ridges by thin soil.

The principal vein occurs within a fault fissure that strikes irregularly eastward and is traceable by float for a few hundred feet on the surface. It is intersected on the west by northward-trending fissures containing gray lime carbonate. This vein, which consists largely of black manganese oxide together with a little calcite and quartz, is 1½ to 2 feet wide where exposed. The manganese oxide shows glistening pseudomorphous cleavage faces which suggest that at least part of it was derived from manganiferous calcite. A qualitative test of the vein material by R. E. Heineman, of the Arizona Bureau of Mines, shows it to contain tungsten, and Mr. Palmer states[28] that an assay of it showed 43.8 per cent manganese, 1.23 per cent WO_3, and 15 per cent silica. The form in which this tungsten occurs is unknown, but S. G. Lasky, of the U.S. Geological Survey, suggests that at least part of it may be present as the mineral hollandite.[29]

C AND W CLAIMS

The C and W group of three unpatented claims, held by W. L. Palmer and G. A. Westerdahl, is in the southeastern part of T. 9 N., R. 2 W., about 2 miles southwest of Silver Mountain. This area is accessible by some 3 miles of trail from the end of a rough road that leads up Banty Creek for 4 miles north of Westerdahl's camp.

Since the location of these claims in 1940, G. A. Westerdahl and W. L. Palmer have worked them in a small way and produced a few hundred pounds of concentrates with a portable hand jig.

The workings are at an altitude of approximately 3,500 feet, on a saddle between Walker and Banty creeks. Here the prevailing

[28]Oral communication.
[29]Oral communication.

formation is pre-Cambrian sedimentary schist, intruded on the south by granite and invaded by large sill-like bodies of tourmaline-bearing pegmatite.

In the vicinity of the claims a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally northeastward and dips about 60° NW.; it strongly affects a compass needle, indicating high content of magnetite. This belt is cut at right angles by a fault zone about 2 feet wide and marked by strong gouge in the hanging wall, which dips 80° SE. Its walls show some sericitization. When visited in June, 1941, this fault zone had been opened by a pit 25 feet long by 20 feet deep from which lenticular bodies, 1 to 2 inches wide, of quartz with massive wolframite and scheelite are reported to have been mined. No visible tungsten minerals remained in the face.

MARICOPA COUNTY

CAVE CREEK DISTRICT

GENERAL FEATURES

The Cave Creek district, of northeastern Maricopa County, is in steep, irregular mountains that consist largely of pre-Cambrian schist and granite, intruded in places by younger granite and overlain on the north by mesa-forming volcanic rocks of Tertiary or Quaternary age.

This district contains deposits of gold, silver, copper, lead, tungsten, molybdenum, and vanadium.

GOLD CLIFF MINE

The Gold Cliff property of thirteen unpatented claims, held by the Gold Cliff Mining Company, is 5 miles by road, via the Dart Ranch, north of Cave Creek post office.

The northeastern portion of this property contains quartz veins from which, for many years, gold ore has been mined intermittently and concentrated in a stamp-gravity mill.

Three claims in the southwestern portion of the group contain the principal tungsten deposits. These deposits, well-known by 1913, were worked during the World War by the Pittsburgh Tungsten Company, but figures on their production are not available. In 1936 the group was leased to Jack Lemons who has produced several tons of ferberite concentrates with the aid of a small gravity plant.

Here slaty to sericitic gray pre-Cambrian schist, which strikes northeastward and dips northwestward at moderate angles, is intruded by a granitic stock that crops out over an east-west length of about a mile and a width of ¼ to ¾ mile. This granite has been extensively invaded and altered by pegmatite. The alteration consists largely of coarse sericite and quartz.

The area has been broken by several faults of undetermined displacement. Springs, important for local water supply, are associated with some of these faults.

George A. Mackenzie
110 Pomona Road
Oak Ridge, Tenn.

Robert H. Powell
500 New York Ave
Oak Ridge, Tenn.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

19. This is strictly a very high grade prospect, and as previously stated, owing to the fact that the feeder vein is high grade ore and all of the geology is right, it merits a full exploratory investigation.

20. The exploration will be conducted to follow a rich feeder vein to the ore body, which will be located along the granite contact about 200 feet distant, to prove an ore body of Scheelite and Ferberite.

21. We plan to opencut 12 feet in depth and 6 feet wide and 200 to 300 feet in length. It would not merit during the opening up of this deposit to move in heavy machinery, therefore, all machinery moved in would have to be packed on muleback, and could not weigh over 300#, or such machinery would have to be portable. Time to complete this prospect is from six months to one year.

22. Lindgren spent many months in the vicinity of this prospect and a full account of the geology of the locality will be found in his book, under the chapter Mineral Deposits of the Bradshaw Mountains. The brief geological description of the Tungsten deposit in question:--------- The open cut workings are at an altitude of approximately 3500 feet, on a saddle between Walker and Banty creeks. Here the prevailing formation is pre-Cambrian (Yavapai) schist, intruded on the South by a granite and invaded by large sill-like bodies of tourmaline-bearing pegamatite. In the vicinity of the claim a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally Northeast and dips about 60° Northwest. It strongly affects a compass needle, indicating high content of magnetite. This belt is cut at right angles by the Tungsten vein as a fault zone 2 feet in width and is marked by strong gouge in the hanging wall, which dips 80° Southeast, its walls show some sericitization. The ore bodies are lenticular in nature, with 1 to 6 inches of quartz and with massive Scheelite and Ferberite.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

23. A. Four Mexican laborers with board.

$200.00 per month for six months.....$4,800.00

B. One overseer at $250.00 per month for 6 mos. 1,500.00

C. Question not applicable.

D. Two tents and camping equipment for 5 persons.... 400.00

E.2 Tandem tractor with blade, fresnel, cable winch attachment and trailer.....2,500.00

Portable Compressor on two wheels, with hose, accessories, spare parts, one sinker and one drifter, bit assortments.....1,400.00

One utility pickup..... 600.00

Jack string and tenders..... (($100.00 a month for 6 months) 600.00

Two mineralite fluorescent ore sampling lights.. 200.00

F. No rental of equipment foreseen.

H. Hand tools, shovels, bars, sledges, single jack and double jacks. 70.00

I. No estimates available.

Total.....$12,070.00

(Note: Have mill and jig for concentrating purposes at camp site.)

George A. Westerdahl
110 Parma Rd.
Oak Ridge, Tenn.

Robert H. Powell,
510 New York Ave.
Oak Ridge, Tenn.

24
First Month:----
Let purchase contract for equipment, itemized in question 23, for delivery to rail head at Morristown, Ariz.

Expenditure requirements about fifty percent ---------- $5720.00

Second Month.
Establish camp site at the mine, set-up equipment, move in supplies of gasoline, mdese, and powder.

Expenditure requirements about 10.4 percent ---------- 1256.00

Third Month.
Exploration by open-cut methods along the tungsten vein.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fourth Month.
After sufficient samples are extracted they will be packed by mule back transportation to Westerdahl's Camp, for appraisal and analyses.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fifth Month.
Continue to follow vein and sink on any promising ore shoots until reaching granite contact.
Expenditure requirements about 10.4 percent ---------- 1256.00

Sixth Month.
Cross-cutting on the granite contact.

Expenditure requirements about 10.4 percent ---------- 1256.00

FILE COPY
SURNAME:

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

June 18, 1951

Mr. George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Subject: DMA-1437X
Re: Exploration Loan
Black Butte Claims

My dear Mr. Westerdahl:

Receipt is acknowledged of your application and attachments of May 29, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1437X and was referred to Mr. P. R. Bradley, Chief, Tungsten Branch on June 4, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1437X.

Sincerely yours,

LANDON F. STROBEL, jr.

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
Files
Bradley
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1437X

Date received 5-31-51

Participation

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 26, 1951

Estimated cost $12,000.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Arizona

Date of filing MF-100

DMA Docket Number, if available 1437X

INSTRUCTIONS

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

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

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

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

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

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

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

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

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

(Name of company)

By George J. Westendahl
(Signature of authorized official)

May 26, 1951.
(Date)

President
(Title)

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

*Same as footnote on page 1.

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

TO: UNITED STATES DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
c/o DMA Field Office
Room 13
Post Office Building
Knoxville, Tennessee
Mr. Robert Laurence, Executive Officer

May 26, 1951.

We herewith submit four (4) signed copies of application form MF-103 for aid for an Exploration Project pursuant to Mineral Order 5, under Defense Production Act of 1950. Attached thereto is the supplementing data and certain exhibits pertinent thereto.

Yours very truly,

George A. Westerdahl

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Enclosures: A, B, C, D, E
Photostat of Deed to R. H. Powell

Exhibit A

University of Arizona

TUCSON

COLLEGE OF MINES AND ENGINEERING

ARIZONA BUREAU OF MINES

May 9, 1939

Mr. G. A. Westerdahl,
Morristown, Arizona.

Dear Sir:

Your letter and sample dated May 2 (file #15743) have come.

This material is largely ferberite which is an iron tungstate. Some hematite (iron oxide) is also present. If you had a sufficient amount of this ore, it would be a tungsten ore.

Very truly yours,

Robt. E. Heineman

Robt. E. Heineman
Mineralogist.

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE EXPIRES
ROBERT E. HEINEMAN
DEC. 31, 1939
ARIZONA, U.S.A.

George G. Mitchell
110 Forest Rd
Oak Ridge, Tenn

Richard H. Powell
510 New York Ave
Oak Ridge, Tenn

QUIT CLAIM DEED.

KNOW ALL MEN BY THESE PRESENTS:

That W. L. Palmer, the party of the first part, for and in consideration of the sum of ONE DOLLAR and other good and valuable considerations to him in hand paid by Robert H. Powell, the party of the second part, receipt thereof is hereby acknowledged, has granted, sold, remised and released and by these presents does grant, sell, remise, release and quit-claim unto the said party of the second part the following described mining property, to-wit:

> Those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Mavapai County, Arizona, being the C & W Mining Claim (A-25), notice of location of record in Book 129, of Mines Page 411-412, Record of Yavapai County, Arizona.
>
> It is understood that grantor only claims to own a half-interest in the above described mining claim.

TO HAVE and TO HOLD the said described mining property unto the party of the second part, his heirs and assigns forever.

WITNESS the hand of the grantor this 28th day of February, 1951.

W. L. Palmer

State of Arizona)
; ss.
County of Maricopa)

This instrument was acknowledged before me this 28th day of February, 1951, by W. L. Palmer.

My commission expires 6/23/54.

J. E. Russell
Notary Public.

George A. Westenberg
110 Pearmon Rd
Oak Ridge, Tenn.

Robert W. Farrell
510 New York Ave
Oak Ridge, Tenn

The mineralogy of these deposits—garnet, epidote, quartz, specularite, scheelite, and powellite—indicates them to be of contact-metamorphic origin.

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MARICOPA COUNTY

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George G. Mitchell
110 Fourth Rd
Oak Ridge, Tenn

Robert H. Powell
510 New York Ave
Oak Ridge, Tenn

A. L. PELLEGRIN & SON
FORMERLY FOR 6 YEARS U. S. ASSAYERS
ASSAYERS AND CHEMISTS

TESTING FOR THE RARE METALS
AND MINERALS, CYANIDE AND
OTHER METALLURGICAL
LABORATORY TESTS

350 SO. STONE AVE.
TUCSON, ARIZONA

ASSAY AND ANALYSIS CERTIFICATE

MR. Westerdahl (Fernstrom)

May 14th 1941

NO. OR MARKS	FIRE ASSAY--PER TON				CHEMICAL ANALYSIS -- PER CENT						
	Gold oz.	Val. at	Silver oz.	Val. at	Copper	@	Lead	@		@	Total Value
36 lbs ore		$		$ WO3	=	40.50%					$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$
		$		$							$

CHARGES $3.00

A. L. Pellegrin & Son. ASSAYERS

George A. Westbrook
110 Pomona Rd
Oak Ridge, Tenn

Robert W. Harrell
510 New York Ave
Oak Ridge, Tenn

CERTIFICATE OF ASSAY

E. A. JACOBS

REGISTERED ASSAYER

Cor. Main and Mesilla Sts.

Certificate No. 414-WO-3 TUCSON, ARIZONA June 27-1940 193

Sample Submitted by Mr. Herbert P. Krucker

SERIAL NO.	SAMPLE MARKED	OZS. PER TON ORE	VALUE PER TON ORE	OZS. PER TON ORE	PER CENT WET ASSAY	PER CENT WET ASSAY	PER CENT WET ASSAY
	1 Sack 32 pounds Tungsten Ore			33.2% WO_3			
	One Sack Thirty Two pounds Net Tungsten Ore Contain:- Thirty Three point Two percent Tungsten Trioxide						

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

Very Respectfully,

E. A. Jacobs

Charges $ 2.00

George A. Mcdonald
110 Farmer Rd
Oak Ridge, Tenn

Robert W. Farrell
510 New York Ave
Oak Ridge,
Tenn.

Enclosure D

CERTIFICATE OF ASSAY

E. A. JACOBS

REGISTERED ASSAYER

Cor. Main and Mesilla Sts.

Certificate No. 422-W03 TUCSON, ARIZONA July 30 1940 193

Sample Submitted by Mr. Herbert P. Krucker

SERIAL NO.	SAMPLE MARKED	GOLD OZS. PER TON ORE	GOLD VALUE PER TON ORE	SILVER OZS PER TON ORE	COPPER PER CENT WET ASSAY	LEAD PER CENT WET ASSAY	PER CENT WET ASSAY
			$				
	2 sacks 114-1/2 pounds net weight tungsten						
	Two sacks One Hundred Fourteen & one Half pounds tungsten						
	contain Nine point eight Tungsten Trioxide.						

(Total 1145)

ALL SAMPLES ASSAYED IN DUPLICATE

WE DO NOT QUOTE ON SINGLE WORK

*Gold Figured $20 per oz. Troy.

Very Respectfully,

E. A. Jacobs

Charges $ 3.50 sampling & assaying

George G. Wanderdahl
110 Harmon Rd
Oak Ridge, Tenn

Richard N. Farrell
510 New York Ave
Oak Ridge, Tenn

Financial Statement

~~HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~

To: U.S. Dept. of Interior
Defense Mobilization Adm.

Name: Robert W. Powell
Address: 510 New York Ave, Oak Ridge, Tenn.

Character of Business: Dairying; Retail Oil Products

For the purpose of obtaining a line of credit with you not to exceed $ see affidavit I hereby tender the following statement of my ~~business~~ affairs as of May 26, 1951, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS				LIABILITIES				
Cash in hand and banks		866	00	Notes Payable	To banks		none.	
Notes Receivable		none.			To others		none	
Oak Ridge National Banking Franklin (Collectable Com'l Paper) Rec'd 6/51.		960	00					
Accts. Receivable Current and Considered Good: For merchandise sold				Accounts Payable	For merchandise, not due	~	80	00
Other					For merchandise, past due		none.	
Personal Property Merchandise (in ~~excess of cost or~~ replacement)	7	000	00		Others			
United States Bonds ~~or Notes~~	1	400	00					
Other Salable (Schedule B)								
Cash Value Life Insurance ($ 17,000.00 Ins. paid up)	8	330	00					
TOTAL QUICK				TOTAL CURRENT				
Real Esate (Schedule A)	12	100	00	Real Estate Mortgages			none.	
Machinery and tools $								
less depreciation Net								
Stocks and Bonds other than U.S. (Schedule C)		590	00	Other liabilities			none.	
Automobiles and trucks 1947 Ford	1	354	89					
1949 Olds.	2	015	75					
Other Assets (Schedule D)								
Royalties from Terra Alta Oil Co. (5 mos - undistributed)	~ 3	000	00	TOTAL LIABILITIES			80	00
				NET WORTH		$ 37	566	64
TOTAL ASSETS	37	646	64	GRAND TOTAL	plus salary from Oak Ridge $600.00 per mo. plus royalties from Terra Alta $1000 per yr.			

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL

SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED					RECONCILEMENT OF NET WORTH—ACCOUNT				
Net Sales for period					Net Worth close previous year				
Cost of goods or material, etc.					Net Profit or Loss for present period				
Gross Profit on sales					Other Additions: (Itemize)				
Selling and general expenses									
Proprietor's Salary									
Net Profit on sales					Adjusted Net Worth				
Add: Other Incove—Investments					Withdrawals—Proprietor				
Interest and Discounts					Other Deductions: (Itemize)				
Recoveries on bad debts									
Deduct: Interest expense									
Bad debts charged off									
Depreciation/Depletion									
NET PROFIT OR LOSS FOR PERIOD $					PRESENT NET WORTH				

(over)

Have endorsed notes of others amounting to $ none Bonds, $ none

In present business 20 years. Carry $ 7000.00 personal household effects insurance on merchandise and $ — and ~~on~~ buildings. Carry $ 48,000.00 ($17,000 Fund ins) life insurance payable to wife, sister, and children

Have pledged $ none of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
Whitston Twp. Fayette Co. Pa.	1/2 A.	garden	none	none	600
Whitston Twp. " " Pa.	2 A.	Cherry orchard - building lot	"	"	500
Connellsville Pa.	entirely in 12,000 A.	gas & oil leases	"	"	1,000
Texas Allegheny Co. Pa.	entirely in 16,600.	gas & oil leases			10,000
Murphysboro Ill. Carbondale.	28 A. 48 A.	gas & oil leases, investment stock		- Voluntary Bankruptcy	
TOTALS					12,100.

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

no

REFERENCES

Name	Address	Name	Address
Edward C. Haney Pres.	Second National Bank	Uniontown Pa.	
Hon. Judge John C. Moran	Fayette County Courts	Uniontown Pa.	
Dr. Myron T. Kelly	Oak Ridge National Laboratory	Oak Ridge, Tenn.	
Dr. Harold B. Gammon	Dept. of Interior	Washington D.C.	

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
	$1000 Conn Pa @ $500	

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? no. Name and address of firm: —
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? no

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this 26 day of May 1951

Witness: Richard W. Reed Jr. (Seal)

Financial Statement

~~HAMILTON NATIONAL BANK~~
~~Knoxville, Tennessee~~

Name George A. Vesterdahl

Address 110 Parma Rd. Oak Ridge. Tenn. Character of Business Chemist.

For the purpose of obtaining a line of credit with you not to exceed $_____ I hereby tender the following statement of my business as of _____, 19____, and agree to notify you promptly of any change affecting my ability to pay.

ASSETS				LIABILITIES				
Cash in hand and banks		400		Notes Payable	To banks	NONE		
Notes Receivable		265			To others	NONE		
Savings Acc't	8[illegible]	[illegible]						
	1	000						
Accts. Receivable Current and Considered Good — For merchandise sold				Accounts Payable	For merchandise, not due		100	
Other					For merchandise, past due	NONE		
Household Goods Merchandise (indicate whether cost or replacement)	2	000			Others			
United States Bonds or Notes		200						
Other Salable (Schedule B)								
Cash Value Life Insurance 3000								
				TOTAL CURRENT				
TOTAL QUICK				Real Estate Mortgages		NONE		
Real Esate (Schedule A)	4	000						
Machinery and tools $ 1000								
less depreciation 700 Net		300						
Stocks and Bonds other than U.S. (Schedule C)				Other liabilities		NONE		
Automobiles and trucks 2	2	000						
Other Assets (Schedule D)								
				TOTAL LIABILITIES			100	
				NET WORTH		11	365	
TOTAL ASSETS	11	465		GRAND TOTAL		11	465	

SPECIFY ANY OF ABOVE ASSETS PLEDGED AS COLLATERAL — SPECIFY ANY OF ABOVE LIABILITIES SECURED BY COLLATERAL

(Note: Attach memorandum to statement, explaining fully assets pledged to secure debts.)

PROFIT AND LOSS STATEMENT FOR YEAR ENDED _____					RECONCILEMENT OF NET WORTH—ACCOUNT				
Net Sales for period					Net Worth close previous year				
Cost of goods or material, etc.					Net Profit or Loss for present period				
Gross Profit on sales					Other Additions: (Itemize)				
Selling and general expenses									
Proprietor's Salary									
Net Profit on sales					Adjusted Net Worth				
Add: Other Incove—Investments					Withdraways—Proprietor				
Interest and Discounts					Other Deductions: (Itemize)				
Recoveries on bad debts									
Deduct: Interest expense									
Bad debts charged off									
Depreciation/Depletion									
NET PROFIT OR LOSS FOR PERIOD $					PRESENT NET WORTH				

(over)

Have endorsed notes of others amounting to $ XXXX None Bonds, $ None

In present business _____ years. Carry $ None insurance on merchandise and $ None

on buildings. Carry $ 14000. life insurance payable to Mrs. P.Z. Westerdahl (wife)

Have pledged $ None of above accounts and notes as collateral.

SCHEDULE A

List of Real Estate Owned and Referred to on Opposite Side

Description or Street No.	Dimensions or Acres	Improvements Consist of	Mortgages or Liens	Due Dates and Amounts of Payments	Value Cash
7 Minining Claims	140		None		2800
Westerdahl's Mining Camp	19	House	"		2000
TOTALS					

(NOTE) If you have ever failed in business or made a composition settlement give particulars below and how and on what basis you settled with creditors.

None

REFERENCES

Name	Address	Name	Address
W. L. Palmer	Castle Hot Springs, Ariz.		
C. D. Susano	5513 Lake shore Drive, Knoxville, Tenn.		
Sears RoeBuck & Co.	(credit) Atlanta, Ga.		

SCHEDULE B OTHER SALABLE (Detail—Showing Value)	SCHEDULE C Stocks and Bonds other than U. S. (Show number of shares, etc., kind and basis of valuation)	SCHEDULE D OTHER ASSETS (Detail—Showing Value)
		Yearly salary $5000 gross

PLEASE ANSWER FULLY:

1. Are you a partner in any firm? No Name and address of firm: _____
(Statement of partnership must be attached to this personal statement)

2. Is real estate as listed recorded in your name and wife? Westerdahls Camp, Ariz. (wife)

I do solemnly swear and certify that the above schedules and statement on opposite side are a true and correct account of the condition of my business and affairs on the day above stated.

Witness my hand and seal, this _____ day of 5-26-51 19

Witness: George P. Westerdahl (Seal)

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Page 1

Attention is called to the fact that the above applicants have not submitted form MF-100, and the following are the answers to questions stated in form MF-103.

1. Joint Owners, undivided one-half interest each in C&W #2 claim.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

2. No partnership, ownership is as per above.

3. Question not applicable.

4-A. Westerdahl, at present Chemist at Oak Ridge National Laboratory, Oak Ridge, Tennessee, owned and operated mining properties, directly and indirectly for the past twenty-five years. From 1942 - 1943, employed with Bureau of Mines in Metallurgical Laboratory; 1943 - 1944 Manganese Ore Company, Henderson, Nevada, as Chemist; 1944 - 1947 employed as Chemist, Tennessee Eastman Company, Manhattan Engineering Project, Oak Ridge, Tennessee; 1947 to current date, employed as Chemist, Oak Ridge National Laboratory.

4-B. Powell, at present Senior Chemist at Oak Ridge National Laboratory, age 42, has had Mining and Geological experience in development of Geochemical data, and in development, operation and ownership of working interests in deep wells for natural gas (9,000 feet). Owns working interest in ten productive deep gas wells at Terra Alta, West Virginia, and in approximately 12,000 acres undeveloped gas territory at the same vicinity; owns and helped develop five productive shallow wells in Pennsylvania, and owns a working interest in the future development of approximately 12,000 acres of gas territory in Southwestern Pennsylvania. Powell has discovered and is developing the mining of an unusual and new graphite discovery in North Carolina. Powell is actively engaged in Research Chemistry at Oak Ridge National Laboratory, and at the same time continued his geologic and mining interests.

4-C. In answer to question 4-B (your number) no selection has been made yet on an overseer or manager of the project, but a tentative offer has been made to Mr. W. L. Palmer, Castle Hot Springs, Arizona.

5. Applicants are owners of the property. George A. Westerdahl is the original locator, owns one-half interest. Robert H. Powell, owner of one-half interest by purchase. (See photostat of deed from W. L. Palmer.)

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

6. No encumbrances of any kind or character.

7. Question not applicable.

8. Current financial statement submitted by each applicant and attached hereto elsewhere.

9. $3,000.00 as minimum. This amount is sufficient to pay applicants' cost of the project as detailed in question 23 when considered as 25% of the total project cost.

10A. Westerdahl's Camp, located three miles by trail from this Tungsten property in question, will be base camp for concentrating and fabricating purposes.

10B. The legal description of C&W Claim #2 is described in C&W Mining Claim (A-25), notice of location of record in Book 129 of Mines, page 411-412, Record of Yavapai County, Arizona which describes those certain unpatented lode mining claims situate in the Silver Mountain Mining District, Yavapai County, Arizona.

"The C&W Claim #2 being approximately two miles in a Southerly direction from Russock Springs, Arizona, marked by stone monument and location shaft, this location shaft being center of this claim, the other four corners are marked by stone monuments in the following manner: 750 feet North from discovery shaft to center end monument, 750 feet South to center end monument, and the East and West lines therefore being 1500 feet in length, each 300 feet from discovery monument Easterly and Westerly, this being a standard size lode claim having a total length of 1500 feet and a width of 600 feet, consisting of 19 acres, more or less, being duly recorded at Prescot, Yavapai County, Arizona, Book of Mines Book 129 - page 411-412."

This claim known as C&W #2 is one of several C&W claims situate in the Silver Mining District, Township #9 North, range to West, and it is 2 miles Southwesterly of Silver Mountain in Yavapai County, State of Arizona.

(A photostat of unrecorded deed dated February 28, 1951 from W. I. Palmer, party of the first part to Robert H. Powell, party of the second part, is attached to indicate Robert H. Powell's title to an undivided one-half interest in both claims #1 and 2.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

11. This property is and has always been known as the C&W Claim #2. Present owners are George A. Westerdahl and Robert H. Powell. Other owners that have owned one-half interest, exclusive of Westerdahl's, are Mr. W. L. Palmer, Castle Hot Springs, Arizona and Mr. N. Cothran, formerly of Castle Hot Springs, Arizona, whose present address is unknown.

12. This Tungsten C&W claim #2 is approximately two miles South of Tussock Springs, Arizona, 32 miles Southwest to Morristown, Arizona, and it is 48 miles Northwest to Kirkland, Arizona. Santa Fe Railway is 32 miles distant at Morristown, Arizona and is 48 miles distant at Kirkland, Arizona. Roads fair to within 2 miles of the mine site.

13. Well water supply sufficient for mining and milling purposes at Westerdahl's Mining Camp 3 miles by trail, from this Tungsten property in question. Electric Power available at Westerdahl's Mining Camp when Tungsten claim is opened for exploration. (See 14)

14. Good camp site, camp water only. One needs only tents and camping equipment, excellent all year around climate. No structures on mining property, but small mill and jig are in storage near Westerdahl's Mining Camp. MP-103 question "State amount of power to be used, rate per hour or other cost, and source" -- applicants do not have available data to answer this question.

15. Ore to be shipped as concentrates 50 to 60% Tungsten Oxide (WO_3) in metal containers, from Wickenburg, Arizona, to the market at Tucson, Arizona. Can be concentrated at Westerdahl Camp. Ore is so high grade that only a rough jig separation is necessary.

16A. Exhibit A - letter of Robert E. Heineman, Mineralogist, University of Arizona dated May 8, 1939.

Westerdahl located this Tungsten in 1939. At that time Westerdahl was working a small placer operation Specimen Gulch, two miles to the Southwest of C&W #2, and this Tungsten Claim was not his major interest at that time. Westerdahl and Palmer mined only a few hundred pounds at a time and mined only the most accessible high-grade Ore. Representative Assay Certificates are shown by photostatic copies as exhibits B, C, and D. (D being assay of tailings only).

Your attention is called to publication entitled "Tungsten Deposits of Arizona" by Eldred D. Wilson, University of

George A. Westerdahl
110 Terma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

Arizona Bulletin, Arizona Bureau of Mines, Volume XII, No. 2, April 1, 1941, page 25-26, Bulletin 143, series 14, photostat of which is attached as Exhibit E for verification of this Tungsten prospect.

Parson and Westerdahl extracted the high grade Scheelite and Ferberite by handtools (1940), packed it on burros and mules, concentrating it by hand jig, and sold concentrates at Tucson, Arizona.

16B. Nothing known about other adjoining properties than the C&W Claims. However, a Columbium (Niobium) and Tantalum Ore, Tariolite, has been found on C&W Claim #1, which claim is not being included in this application. See University of Arizona Bulletin entitled "Minerals of Arizona" by J. H. Galbraith, Bureau of Mines Volume XII, #3, July 1, 1941, series 15, Bulletin 149, page 62 for "Tariolite" (Fe Mn) $(Nb, Ta)_2O_6$ found on C&W Claim #1, adjoining C&W #2.

In 1942 Westerdahl discontinued general mining exploration and prospecting to work as chemist as per reported question number 4, as part of the 1942 War effort. Due to the then price of Tungsten, general restrictions imposed on independent miners as a part of the then regulations for mining, and due to a lack of capital, this Tungsten property was remained undeveloped during World War II. It is the applicant's belief that due to the present shortage of Tungsten, and the market conditions resulting therefrom, and the enhanced financial position of the applicants, and newly acquired information of a geological character obtained during summer prospecting in this vicinity during vacations (1949-1950) from Oak Ridge National Laboratory, plus the aid applied for will result in a very worth while project on C&W #2 Claim at the present time.

17A, B and C are not applicable.

18. This true fissure vein fits Lindgren's description of Tungsten veins as contained in his "Mineralization in the Bradshaw Mountains". Practically all the veins of Northeast strike in this district carry Wolfrenite. Several veins of this type occur in the vicinity of Tule Creek. The ore occurs in lenses or shoots about 4 feet apart containing high grade Scheelite and Ferberite assaying from 20 to 30 percent WO_3 as taken from an openout ten feet in depth. This vein could be classified as a feeder vein and the main ore body is no doubt on the granite contact which is 200 feet away. Exploration of this vein and the contact is what prompts us to believe funds will be well spent to open it up, for all the geology of this deposit falls in place.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

19. This is strictly a very high grade prospect, and as previously stated, owing to the fact that the feeder vein is high grade ore and all of the geology is right, it merits a full exploratory investigation.

20. The exploration will be conducted to follow a rich feeder vein to the ore body, which will be located along the granite contact about 200 feet distant, to prove an ore body of Scheelite and Ferberite.

21. We plan to opencut 12 feet in depth and 6 feet wide and 200 to 300 feet in length. It would not merit during the opening up of this deposit to move in heavy machinery, therefore, all machinery moved in would have to be packed on muleback, and could not weigh over 300#, or such machinery would have to be portable. Time to complete this prospect is from six months to one year.

22. Lindgren spent many months in the vicinity of this prospect and a full account of the geology of the locality will be found in his book, under the chapter Mineral Deposits of the Bradshaw Mountains. The brief geological description of the Tungsten deposit in question:--------- The open cut workings are at an altitude of approximately 3500 feet, on a saddle between Walker and Santy creeks. Here the prevailing formation is pre-Cambrian (Yavapai) schist, intruded on the South by a granite and invaded by large sill-like bodies of tourmaline-bearing pegmatite. In the vicinity of the claim a prominent belt of granular dark-colored schist a few hundred feet wide strikes generally Northeast and dips about 60° Northwest. It strongly affects a compass needle, indicating high content of magnetite. This belt is cut at right angles by the Tungsten vein as a fault zone 2 feet in width and is marked by strong gouge in the hanging wall, which dips 80° Southeast, its walls show some sericitization. The ore bodies are lenticular in nature, with 1 to 6 inches of quartz and with massive Scheelite and Ferberite.

George A. Westerdahl
110 Parma Road
Oak Ridge, Tennessee

Robert H. Powell
510 New York Avenue
Oak Ridge, Tennessee

23. A. Four Mexican laborers with board.

$800.00 per month for six months.....$4,800.00

B. One overseer at $250.00 per month for 6 mos. 1,500.00

C. Question not applicable.

D. Two tents and camping equipment for 5 persons.... 400.00

E. 2 Ford tractors with blade, fresnel, cable winch attachment and trailer.....2,500.00

Portable Compressor on two wheels, with hose, accessories, spare parts, one sinker and one drifter, bit assortments.....1,400.00

One utility pickup..... 600.00

Pack string and tenders.....
($100.00 a month for 6 months) 600.00

Two mineralite fluorescent ore sampling lights.. 200.00

F. No rental of equipment foreseen.

H. Hand tools, shovels, bars, sledges, single jack and double jacks..... 70.00

I. No estimates available.

Total.....$12,070.00

(note: Have mill and jig for concentrating purposes at campsite.)

George A. Westerdahl
110 Parma Rd.
Oak Ridge, Tenn.

Robert H. Powell,
510 New York Ave.
Oak Ridge, Tenn.

24
First Month:----
Let purchase contract for equipment, itemized in question 23, for delivery to rail head at Morristown, Ariz.

Expenditure requirements about fifty percent ---------- $5720.00

Second Month.
Establish camp site at the mine, set-up equipment, move in supplies of gasoline, mdose, and powder.

Expenditure requirements about 10.4 percent ---------- 1256.00

Third Month.
Exploration by open-out methods along the tungsten vein.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fourth Month.
After sufficient samples are extracted they will be packed by mule back transportation to Westerdahl's Camp, for appraisal and analyses.

Expenditure requirements about 10.4 percent ---------- 1256.00

Fifth Month.
Continue to follow vein and sink on any promising ore shoots until reaching granite contact.
Expenditure requirements about 10.4 percent ---------- 1256.00

Sixth Month.
Cross-cutting on the granite contact.

Expenditure requirements about 10.4 percent ---------- 1256.00