A Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

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DMEA ~~DMA~~ Docket No. 2401

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EXPLORATION PROJECT

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

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To: Code 500, Rm. 2614 Date 3-3-52

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Defense Minerals Administration 3-14-52

Review of Application for Exploration Assistance

To: Mr. C. O. Mittendorf

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 4 1952

Docket No. DMEA-2401

Commodity Lead-zinc

Total Amount $9,873.54

Govt. Participation 50%, $4,936.77

1. Name and Address of Applicant The Eagle Picher Company, Mining & Smelting Division, First National Bank Building, Miami, Oklahoma

2. Location of Property SE 1/4, Sec. 29, T. 2 N., R. 1 E., Lafayette County, Wisconsin - Fred Heim tract = 160 acres.

PROJECT NO. 4

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

If not, application will be rejected.

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

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

a) Good X (see DMEA 2399 which is an adjacent tract)

b) Poor

c) None

d) Don't know--needs field examination

e) Is there an alternative and favorable project? No
(If so, attach an explanation)

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

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

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

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? _____

b) MF-202? Special guarantee contract

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

a) Available manpower Yes

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

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

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

_____

Is a field check needed on this point? No

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

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? Yes If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes

_____

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

If not, what part of it is? _____

_____

_____

_____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Yes

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? Yes If so, attach a draft. Attached

e) Are the cost estimates reasonable? Yes

f) Should more information be requested from applicant? No

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

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

c) Is a field check needed? No

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

a) Is it applicable? No

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

c) Are rents and charges reasonable?_____

d) Is a field check needed? No

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

a) Are there sufficient data? Yes

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

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

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed? No

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data?

c) Reasonable?

d) Field check needed? No

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

(All exploration must be completed within two years)

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

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Reviewed by: H. E. Olund
H. E. Olund, BM 3-5-52
O.M. Bishop
O.M. Bishop, BM 3-5-52
E. J. Lyons
E.J. Lyons, GS, 3-14-52

Date 3-14-52

PROJECT NO. 4

Summary of drilling - Average depth of holes = 122.86 feet.

	No. of drill holes	Footage
1. Preliminary pattern drilling	7	860
2. Structure drilling	14	1,720
3. Drilling to delineate orebodies	27	3,317
Totals	48	5,897

Total maximum footage for project = 5,897'
Average footage per month = 328'

	Estimated Cost per month	Estimated cost for entire project
Drilling at $1.50/foot.....$	491.42	$ 8,845.56
Plugging holes at $5.00 each.....	13.33	239.94
Salary of geologists.....	43.78	788.04
	548.53	9,873.54
50% Government share of cost $	274.26	$ 4,936.77

Form MF-100
(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. DMEA-2401

Date received 3-3-52

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 3 - 1952

The Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application February 25, 1952

Estimated cost

Mineral or metal Lead and zinc

Percentage of Government participation 50%

Location of project - See Below

Eagle-Picher Project No. 4

Date of filing MF-100

DMA Docket Number, if available

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.

Answer to all questions which seem applicable are made on Exhibit A attached and made a part hereof.

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, 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.

The Eagle-Picher Company
Mining and Smelting Division
(Name of company)

By Elmer Isern
(Signature of authorized official) Elmer Isern

February 25, 1952
(Date)

Vice-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

Exhibit A
The Eagle-Picher Company
Project No. 4

1. The applicant, The Eagle-Picher Company, is a corporation organized and existing under the laws of the State of Ohio, with main offices at American Building, Cincinnati, Ohio. This application is being made by the Mining and Smelting Division of the above named corporation, which division of the Company maintains its main office at First National Bank Building, Miami, Oklahoma. All correspondence in connection with this application should be with the applicant at the Miami, Oklahoma address.

3. The name and address of the officers, directors and five largest stockholders of The Eagle-Picher Company are as follows:

Officers:

Joel M. Bowlby, Chairman of Board
American Building, Cincinnati, Ohio

T. Spencer Shore, President
American Building, Cincinnati, Ohio

William R. Dice, Vice-President and Comptroller
American Building, Cincinnati, Ohio

Carl A. Geist, Vice-President, Secretary & Treasurer
American Building, Cincinnati, Ohio

Elmer Isern, Vice-President
Miami, Oklahoma

Miles M. Zoller, Vice-President
American Building, Cincinnati, Ohio

Carl F. Hertenstein, Assistant Treasurer
Twelfth and Vine Streets, Cincinnati, Ohio

Richard Serviss, Assistant Secretary
American Building, Cincinnati, Ohio

Kenneth E. Kimmel, Assistant Secretary
Miami, Oklahoma

Board of Directors:

Joel M. Bowlby, Chairman
Carl A. Geist
Carl F. Hertenstein
Elmer Isern
Stanley R. Miller
30 Pine Street, New York, N. Y.
William H. Mitchell
Cincinnati, Ohio
John J. Rowe
Fourth and Walnut Streets, Cincinnati, Ohio
T. Spencer Shore
Miles M. Zoller
George A. Spiva
Spiva Building, Joplin, Missouri

Five Largest Shareholders	Shares
Carl F. Hertenstein c/o The Western Bank & Trust Co. Twelfth and Vine Streets Cincinnati, Ohio	64,282
Katherine H. Watson 1625 Beach Drive St. Petersburg 4, Florida	23,280
Baker, Weeks & Harden One Wall Street New York, N. Y.	18,248
Carolyn L. Moser c/o Trust Department The Western Bank & Trust Co. Twelfth and Vine Streets Cincinnati, Ohio	17,130
Merrill, Lynch, Pierce, Fenner & Beane 70 Pine Street New York, N. Y.	15,861

4. The Eagle-Picher Company has engaged in the business of exploration, mining, smelting and fabrication of lead and zinc products since about the year 1920. It operated in the Tri-State Lead and Zinc District of Miami, Oklahoma and Kansas for many years under the name of The Eagle-Picher Lead Company. Since about 1930 its lead and zinc mining and smelting operations have been carried on through its wholly owned subsidiary, The Eagle-Picher Mining and Smelting Company. The subsidiary company was dissolved November 30, 1951, and all its operations, including its assets and liabilities, were taken over by the parent company. Since that date the mining and smelting operations of the Company have been continued under the name of The Eagle-Picher Company, (Mining and Smelting Division), Miami, Oklahoma. The Company has extensive lead and zinc mines in the Tri-State District of Kansas, Oklahoma and Missouri. It operates lead and zinc mines in the vicinity of Tucson, Arizona, in the province of Chihuahua, Mexico and in the County of Jo Daviess, Illinois, and Grant and Lafayette Counties, Wisconsin. It operates a large zinc and lead central concentrating plant near Picher, Oklahoma, a lead and zinc central concentrating plant near Galena, Illinois, a central concentrating plant near Tucson, Arizona, a concentrating plant at its Mexican properties, as well as various lead and zinc smelters at Henryetta, Oklahoma, Galena, Kansas, East Chicago and Hillsboro, Illinois. The Mining and Smelting Division of the Company has carried on extensive exploration operations in the Tri-State District of Kansas, Oklahoma and Missouri for many years. For the past several years it has carried on extensive exploration in Jo Daviess County, Illinois and Grant and Lafayette Counties, Wisconsin, as well as exploration in other localities.

5. The applicant holds title and the right to mine the properties described in this application as Lessee under leases granted directly to its subsidiary, The Eagle-Picher Mining and Smelting Company, by the owners of the land. The leases as to each property are exactly the same, except as to dates and names of lessors and property involved, and except for an occasional very minor modification of no significance whatever to this application. Therefore, in the interest of brevity, in Exhibit B attached hereto and made a part hereof, we identify each lease as to landowners, date and property covered and we also attach a copy of one of the leases marked Exhibit C and made a part hereof, as representative of all the leases involved. All leases referred to in this application are in good standing.

7. We propose to use, in lieu of subordination agreements from the landowners, the form of Guaranty Contract recently approved by the Department for use by Vinegar Hill Zinc Company in its proposed contracts with the Government covering the same activity in the Tri-State Area of Wisconsin, Illinois and Iowa.

8. This application is one of four applications covering four different projects which applicant is filing at this time with DMPA. In lieu of the request for current financial statement and a profit and loss statement, we are submitting along with all various applications one copy of our annual statement for the fiscal year ending November 30, 1950. We trust that this may be acceptable for the purpose of furnishing the information described. The annual statement of our Company for the fiscal year ending November 30, 1951, is not available as yet, but if desired we can forward it to the Department as soon as it is available, which should be very soon, or furnish such other information of that nature immediately as the Department may request.

9. The applicant has ample funds which it is prepared to invest in the proposed project in accordance with the representations herein.

12. The properties described herein are located approximately 11 miles north of Galena, Illinois and near State Highway 80. The closest shipping point, we believe, is Galena, Illinois. Certainly there are ample roads and shipping facilities convenient to the area involved.

13. There is an abundance of underground water throughout the area involved in this application, sufficient to carry on any exploration hereunder and sufficient to any mining or beneficiation which may result from explorations hereunder. The same is true of electric power.

15. In the event any ore bodies are developed and mined by the applicant as a result of explorations hereunder, it now maintains and operates an efficient and modern lead and zinc concentrating plant approximately 7 miles north of Galena, Illinois at which all its ores mined from lands involved in this project can be beneficiated.

20. In exploration under this application, if approved, applicant will be searching for lead and zinc sulphide deposits of the nature common to that area.

21. All exploration will be conducted by churn drilling from the surface and such drilling is divided into three classifications: First, preliminary pattern drilling, second, structure drilling, and third, drilling to delineate the ore bodies.

The preliminary pattern drilling is indicated on the map enclosed herewith and marked Exhibit D, where the drill hole locations are shown by red circles and the depth in feet to be drilled is shown under each location.

Structure drilling will follow the pattern drilling and will be laid out to outline more closely the structures and areas of mineralization which may be disclosed by pattern drilling. Twice as many drill holes have been allotted for structure drilling on each lease as are shown for pattern drilling on the map. The average depth used is the same as the average depth of the pattern drilling.

The drilling to delineate and/or block out the ore bodies will be done after the structure drilling is completed, and one drill hole per 6 acres of area is assigned to each project for this purpose. The average depth used is the same as the average depth of the pattern drilling. The drilling allocated for each classification is as follows:

Summary of Drilling

Average Depth of Holes - 122.86 feet

	Number of Drill Holes	Footage
1. Preliminary Pattern Drilling	7	860
2. Structure Drilling	14	1,720
3. Drilling to delineate ore bodies	27	3,317
Totals	48	5,897

It is understood that the drilling under the second and third classifications will be done only in the event, in the opinion of applicant, results from drilling under the preceding classifications recommend such further activity and expenditure.

Applicant estimates that it will require a period of 18 months to complete drilling under all the classifications noted. The estimated time of first classification from time drilling begins is 5 months. For the second classification 9 months from the beginning of drilling and the third classification, 18 months from the beginning of drilling.

22. Briefly stated, applicant recommends the area herein described for prospecting for the following reasons:

1. The favorable ore horizons are known to be below the zone of oxidation in these lands.

2. The areas within a mile or two north, south and east of the areas described herein contained ore bodies in the deep favorable zinc horizons.

3. Strategic Minerals Investigations Preliminary Map 3-216, Plate 2, Sheets 1 and 2, published by the U. S. Geological Survey indicate favorable structures on these lands which have been but little prospected.

23. All drilling required under this project will be contracted to independent contractors at a cost per foot for drilling now estimated at One Dollar and Fifty Cents ($1.50) per foot. This cost might increase during the 18 months' period in accordance with the additional cost which might accrue in the same period in other lines of endeavor. However, we anticipate that there will be no substantial increase in such cost within the period necessary to complete this project. All exploration carried on hereunder will be supervised and directed by the Geological Department of the applicant and the drilling will be under the immediate supervision of two of our field geologists. The cost of the project will be the cost of the contract drilling, cost of plugging holes and the salaries of the two field geologists immediately in charge of the project.

On the basis of doing the full amount of drilling in a period of 18 months, the averaged monthly drilling schedule, cost to DMPA per month, and total maximum cost to DMPA is shown as follows:

Total maximum footage for project: 5,897

Averaged footage to be drilled per month: 328

	Estimated Cost Per Month	Estimated Total Cost For 18 Month Period
Drilling at $1.50 per foot	$491.42	$8,845.56
Plugging holes at $5.00 each	13.33	239.94
Salary of Geologists*	43.78	788.04
	$548.53	$9,873.54
50% to DMPA	$274.26	$4,936.77

* Applicant will place this project as well as others under direct supervision of a Chief Field Geologist and a Field Geologist, at salaries of $425.00 and $397.00 per month respectively. These salary costs are allocated to all exploration projects on basis of footage drilled.

Exhibit B
The Eagle-Picher Company
Project No. 4

LEASE INCLUDED IN PROJECT

1. Lease dated April 19, 1951, from Fred Heim, a single man, Lessor, to The Eagle-Picher Mining and Smelting Company, Lessee, upon the following described lands:

   The Southeast quarter of Section Twenty-nine (29), Township Two (2) North, Range One (1) East of the 4th P.M., Lafayette County, Wisconsin, containing 160 acres,

   Acres 160.00

   Total Acreage 160.00

Exhibit C
The Eagle-Picher Company
Project No. 4

MINING LEASE

THIS AGREEMENT, Made and entered into this 19th day of April, 1951, by and between Fred Heim, Cuba City, Wisconsin, a single man, hereinafter referred to as Lessors, and THE EAGLE-PICHER MINING AND SMELTING COMPANY, a Delaware corporation, hereinafter referred to as Lessee,

WITNESSETH: That,

All the covenants and obligations hereof to be kept and performed on the part of Lessors shall be deemed to be both joint and several as to such Lessors, except that any notices or demands to be made by Lessors shall be signed by all of said Lessors.

Lessors, in consideration of the sum of One Dollar ($1.00) to them in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements to be kept and performed by Lessee, its sublessees, successors or assigns, the sufficiency of which to support each and every covenant, right and privilege herein granted is hereby acknowledged, and the royalties to be paid Lessors, all as hereinafter set forth, have and by these presents do demise, lease and let to said

for the purpose hereof considered and treated as one parcel, for the term of ten (10) years from and after the date hereof, together with the option if this lease is in force and effect on such expiration date of an extension or renewal for a like period of time thereafter; all upon the following terms and conditions, to-wit:

1. Lessee agrees to enter upon said lands leased hereby within ninety (90) days from the date hereof, and commence prospect drilling or mining operations, including such installation of such pumps as may be found necessary to handle the water that may be encountered, and thereafter conduct either prospecting or mining operations at least nine (9) months out of each year under the terms hereof, which operations shall not be suspended for more than thirty (30) days at any one time during the nine-month's working period without written permission of Lessors; Provided, however, Lessee may, at its election, pay to Lessors the sum of Twenty-five Dollars ($25.00) on or before the tenth day of each calendar month in lieu of the foregoing provisions requiring prospecting or mining on the property described herein, and such payments shall be considered as advance royalty and be deducted from the royalty payments hereafter specified herein as and when mining production is actually begun on said property; and provided, further, that Lessee shall not be required to conduct pumping, prospecting or mining operations on said lands during such times as the market price of Spelter shall be below six cents (6¢) per pound on the East St. Louis, Illinois metal market, cessation of work for this reason in no event to exceed a period of two years at any one time.

2. Lessee shall furnish to Lessors a complete log of each and every hole drilled on said lands, and where cuttings from drill holes are assayed, a copy of the assay, and at reasonable times upon request from Lessors, but not oftener than twice in any one year, a map showing definite location of each hole. Upon [illegible] same is desired by Lessee

4. It is agreed that Lessee shall have the right to use the drifts and shafts of this land to haul and/or raise the ores mined from adjoining or neighboring lands, or to haul and raise ores mined from this land through drifts and shafts located on adjoining or neighboring lands. In either event Lessee shall exercise extreme care to prevent a commingling of ores from this land with ores from other lands before such ores reach the mill where they are to be milled. In the event that Lessee desires to haul underground and/or raise ores mined from adjoining or neighboring lands through drifts and shafts on this land, and Lessee is not at the same time mining ores on this land, it shall pay to Lessors the sum of Fifty Dollars ($50.00) per month for such use of Lessors' land.

5. Ores and minerals mined from this land may be cleaned and prepared for market thereon in an independent operation, or at a central concentrating plant located on this or other lands within the Tri-State Area of Illinois, Wisconsin and Iowa, separately or in connection with other ores, as Lessee may elect, and if cleaned at such a central concentrating plant shall be weighed, assayed, treated, handled and the net recoverable lead and zinc concentrates determined, disposed of, accounted for, and royalty due Lessors thereon determined, in accordance with weighing, sampling and concentrating methods recognized in the industry as practical and efficient at the time of receipt at the mill. Nothing herein shall be construed so as to permit Lessee to construct and operate a central concentrating plant on the lands herein described, without the express written consent of Lessors. Complete and permanent records shall be made and kept of said entire transaction, which shall be open to inspection and audit of Lessors or their agent at all reasonable times, and Lessors or their agents may likewise be present and observe said operation at all reasonable and seasonable times. Subject to the payment of royalty hereinafter provided, all lead and zinc concentrates or other recoverable values shall belong to Lessee. Tailings and other residues resulting from milling, in an independent operation, on the lands herein described of ores mined therefrom shall belong to Lessors, subject to Lessee's right to further treat same for recoverable minerals or metal values, during the life of this Lease. If ores mined and raised on said lands herein [illegible] and cleaned at a central concentrating

kind and prevailing at the time said concentrates are disposed of; and/or, (b) the value of the recoverable concentrates, as shown by assay, contained in the ores taken to a central mill, based upon the market price prevailing in the Tri-State District for similar concentrates at the time said ores are delivered to the Mill for treatment. Lessors shall have no interest in any bonus or premium paid to Lessee by the United States Government or any agency thereof on the ores and minerals produced from the premises nor shall any royalty be paid on said bonus or premium. The same rate of royalty shall be paid in the same manner on all iron concentrates recovered and marketed separately by Lessee from the ores mined from said premises hereunder.

7. During the prospecting period as herein provided for, Lessee shall keep all gates on the premises closed and shall pay Lessors for actual damage to growing crops caused by prospecting operations hereunder. In the event that mining operations are commenced on said premises Lessee agrees upon written request from Lessors to construct cattle guards in place of gates used by Lessee in entering or leaving said property. It is further agreed that Lessee will not sink any shaft or erect any mill within three hundred feet (300') of any dwelling or other principal farm buildings located on the premises herein described without the written consent of Lessors.

8. Lessors agree to pay their proportionate part of any taxes assessed or levied by the State in which said lands are located, or any subdivision thereof, or by the Federal Government, against ores or minerals produced from said lands.

9. Lessors hereby warrant and agree to defend the title to the lands leased herein, and Lessee is hereby given and shall at all times during the life hereof have the right, but is not obliged, to pay taxes, mortgages or other liens which may be due and payable in the event of default of payment by Lessors, in which event Lessee shall be subrogated to all the rights of the holder thereof.

10. In case of failure of Lessee to keep and perform the terms and obligations of this Lease, Lessors may give thirty (30) days' written notice of the breach or violation complained of, and if such violation or default is not removed or corrected [illegible] the same can be remedied within that

12. This Lease shall run to and be binding upon each of the parties hereto, their heirs, legatees, legal representatives, successors, sublessees or assigns, respectively.

In Witness Whereof, the Lessors have hereunto set their hands and seals, and the Lessee has caused its name to be subscribed by its proper officers, the day and year first hereinabove set out.

Signed by Fred Heim

(S) Fred Heim
Fred Heim

In the presence of:

(S) W. H. Poole
W. H. Poole
(S) M. B. Gibbons
M. B. Gibbons
Witnesses

Signed by

In the presence of:

Witnesses

Signed by Elmer Isern

In the presence of:

State of Wisconsin)
) ss.
County of Grant)

Be it remembered, that on this 19th day of April, 1951, before me, the undersigned, a Notary Public within and for the County and State aforesaid, came Fred Heim - a single man -, who are personally known to me to be the same persons who executed the within and foregoing instrument of writing, and such persons duly acknowledged the execution of the same.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

((SEAL)) (S) M. B. Gibbons
M. B. Gibbons, Notary Public,
Grant County, Wisconsin

My Commission Expires:

August 19, 1951

State of _____)
) ss.
County of _____)

Be it remembered, that on this _____ day of _____, 19___, before me, the undersigned, a Notary Public within and for the County and State aforesaid, came _____, who are personally known to me to be the same persons who executed the within and foregoing instrument of writing, and such persons duly acknowledged the execution of the same.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

_____
Notary Public

My Commission Expires:

Bishop

Defense Minerals Administration

Review of Application for Exploration Assistance

To: Mr. C. O. Mittendorf

Docket No. DMEA-2401

Commodity Lead-zinc

Total Amount $9,873.54

Govt. Participation 50%, $4,936.77

1. Name and Address of Applicant The Eagle Picher Company, Mining & Smelting Division, First National Bank Building, Miami, Oklahoma

2. Location of Property SE 1/4, Sec. 29, T. 2 N., R. 1 E., Lafayette County, Wisconsin - Fred Heim tract = 160 acres.

PROJECT NO. 4

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

If not, application will be rejected.

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

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

a) Good X (see DMEA 2399 which is an adjacent tract)

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project? No
(If so, attach an explanation)

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

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

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

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? _____

b) MF-202? Special guarantee contract

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

a) Available manpower Yes

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

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

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

_____

Is a field check needed on this point? No

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

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? Yes If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes

_____

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

If not, what part of it is? _____

_____

_____

_____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? **Yes**

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? **Yes** If so, attach a draft. **Attached**

e) Are the cost estimates reasonable? **Yes**

f) Should more information be requested from applicant? **No**

g) Is a field examination necessary to complete Exhibit A? **No**

11. Exhibit B (question 23-d)*

a) Is it applicable? **No**

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

c) Is a field check needed? **No**

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

a) Is it applicable? **No**

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

c) Are rents and charges reasonable?_____

d) Is a field check needed? **No**

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

a) Are there sufficient data? **Yes**

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

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

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed? **No**

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data?

c) Reasonable?

d) Field check needed? No

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

(All exploration must be completed within two years)

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

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Reviewed by: H. E. Olund

H. E. Olund, BM 3-5-52

O.M. Bishop

O.M. Bishop, BM 3-5-52

E. J. Lyons

E.J. Lyons, GS, 3-14-52

Date 3-14-52

PROJECT NO. 4

Summary of drilling - Average depth of holes = 122.86 feet.

	No. of drill holes	Footage
1. Preliminary pattern drilling	7	860
2. Structure drilling	14	1,720
3. Drilling to delineate orebodies	27	3,317
Totals	48	5,897

Total maximum footage for project = 5,897'
Average footage per month = 328'

	Estimated Cost per month	Estimated cost for entire project
Drilling at $1.50/foot.....	$ 491.42	$ 8,845.56
Plugging holes at $5.00 each.....	13.33	239.94
Salary of geologists.....	43.78	788.04
	548.53	9,873.54
50% Government share of cost	$ 274.26	$ 4,936.77

EXPLORATION

Subject: DMEA-2401
Re: Exploration Loan
Project No. 4
March 3, 1952

Mr. Elmer Isern, Vice President
Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

My dear Mr. Isern:

This will acknowledge receipt of your application dated February 25, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2401 and referred to the Base Metals Division.

Kindly refer to DMEA-2401 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Acting Administrative Officer

7862

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. DMEA-2401

Date received 3-3-52

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 3 - 1952

The Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application February 25, 1952

Estimated cost

Mineral or metal Lead and zinc

Percentage of Government participation ~~50%~~

Location of ~~XXXX~~ project - See Below

Eagle-Picher Project No. 4

Date of filing MF-100

DMA Docket Number, if available

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.

Answer to all questions which seem applicable are made on Exhibit A attached and made a part hereof.

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, 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.

The Eagle-Picher Company
Mining and Smelting Division
(Name of company)

By [signature]
(Signature of authorized official) Elmer Isern

February 25, 1952
(Date)

Vice-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

Exhibit A
The Eagle-Picher Company
Project No. 4

1. The applicant, The Eagle-Picher Company, is a corporation organized and existing under the laws of the State of Ohio, with main offices at American Building, Cincinnati, Ohio. This application is being made by the Mining and Smelting Division of the above named corporation, which division of the Company maintains its main office at First National Bank Building, Miami, Oklahoma. All correspondence in connection with this application should be with the applicant at the Miami, Oklahoma address.

3. The name and address of the officers, directors and five largest stockholders of The Eagle-Picher Company are as follows:

Officers:

Joel M. Bowlby, Chairman of Board
American Building, Cincinnati, Ohio

T. Spencer Shore, President
American Building, Cincinnati, Ohio

William R. Dice, Vice-President and Comptroller
American Building, Cincinnati, Ohio

Carl A. Geist, Vice-President, Secretary & Treasurer
American Building, Cincinnati, Ohio

Elmer Isern, Vice-President
Miami, Oklahoma

Miles M. Zoller, Vice-President
American Building, Cincinnati, Ohio

Carl F. Hertenstein, Assistant Treasurer
Twelfth and Vine Streets, Cincinnati, Ohio

Richard Serviss, Assistant Secretary
American Building, Cincinnati, Ohio

Kenneth E. Kimmel, Assistant Secretary
Miami, Oklahoma

Board of Directors:

Joel M. Bowlby, Chairman
Carl A. Geist
Carl F. Hertenstein
Elmer Isern
Stanley R. Miller
30 Pine Street, New York, N. Y.
William H. Mitchell
Cincinnati, Ohio
John J. Rowe
Fourth and Walnut Streets, Cincinnati, Ohio
T. Spencer Shore
Miles M. Zoller
George A. Spiva
Spiva Building, Joplin, Missouri

Five Largest Shareholders	Shares
Carl F. Hertenstein c/o The Western Bank & Trust Co. Twelfth and Vine Streets Cincinnati, Ohio	64,282
Katherine H. Watson 1625 Beach Drive St. Petersburg 4, Florida	23,280
Baker, Weeks & Harden One Wall Street New York, N. Y.	18,248
Carolyn L. Moser c/o Trust Department The Western Bank & Trust Co. Twelfth and Vine Streets Cincinnati, Ohio	17,130
Merrill, Lynch, Pierce, Fenner & Beane 70 Pine Street New York, N. Y.	15,861

4. The Eagle-Picher Company has engaged in the business of exploration, mining, smelting and fabrication of lead and zinc products since about the year 1920. It operated in the Tri-State Lead and Zinc District of Miami, Oklahoma and Kansas for many years under the name of The Eagle-Picher Lead Company. Since about 1930 its lead and zinc mining and smelting operations have been carried on through its wholly owned subsidiary, The Eagle-Picher Mining and Smelting Company. The subsidiary company was dissolved November 30, 1951, and all its operations, including its assets and liabilities, were taken over by the parent company. Since that date the mining and smelting operations of the Company have been continued under the name of The Eagle-Picher Company, (Mining and Smelting Division), Miami, Oklahoma. The Company has extensive lead and zinc mines in the Tri-State District of Kansas, Oklahoma and Missouri. It operates lead and zinc mines in the vicinity of Tucson, Arizona, in the province of Chihuahua, Mexico and in the County of Jo Daviess, Illinois, and Grant and Lafayette Counties, Wisconsin. It operates a large zinc and lead central concentrating plant near Picher, Oklahoma, a lead and zinc central concentrating plant near Galena, Illinois, a central concentrating plant near Tucson, Arizona, a concentrating plant at its Mexican properties, as well as various lead and zinc smelters at Henryetta, Oklahoma, Galena, Kansas, East Chicago and Hillsboro, Illinois. The Mining and Smelting Division of the Company has carried on extensive exploration operations in the Tri-State District of Kansas, Oklahoma and Missouri for many years. For the past several years it has carried on extensive exploration in Jo Daviess County, Illinois and Grant and Lafayette Counties, Wisconsin, as well as exploration in other localities.

5. The applicant holds title and the right to mine the properties described in this application as Lessee under leases granted directly to its subsidiary, The Eagle-Picher Mining and Smelting Company, by the owners of the land. The leases as to each property are exactly the same, except as to dates and names of lessors and property involved, and except for an occasional very minor modification of no significance whatever to this application. Therefore, in the interest of brevity, in Exhibit B attached hereto and made a part hereof, we identify each lease as to landowners, date and property covered and we also attach a copy of one of the leases marked Exhibit C and made a part hereof, as representative of all the leases involved. All leases referred to in this application are in good standing.

7. We propose to use, in lieu of subordination agreements from the landowners, the form of Guaranty Contract recently approved by the Department for use by Vinegar Hill Zinc Company in its proposed contracts with the Government covering the same activity in the Tri-State Area of Wisconsin, Illinois and Iowa.

8. This application is one of four applications covering four different projects which applicant is filing at this time with DMPA. In lieu of the request for current financial statement and a profit and loss statement, we are submitting along with all various applications one copy of our annual statement for the fiscal year ending November 30, 1950. We trust that this may be acceptable for the purpose of furnishing the information described. The annual statement of our Company for the fiscal year ending November 30, 1951, is not available as yet, but if desired we can forward it to the Department as soon as it is available, which should be very soon, or furnish such other information of that nature immediately as the Department may request.

9. The applicant has ample funds which it is prepared to invest in the proposed project in accordance with the representations herein.

12. The properties described herein are located approximately 11 miles north of Galena, Illinois and near State Highway 80. The closest shipping point, we believe, is Galena, Illinois. Certainly there are ample roads and shipping facilities convenient to the area involved.

13. There is an abundance of underground water throughout the area involved in this application, sufficient to carry on any exploration hereunder and sufficient to any mining or beneficiation which may result from explorations hereunder. The same is true of electric power.

15. In the event any ore bodies are developed and mined by the applicant as a result of explorations hereunder, it now maintains and operates an efficient and modern lead and zinc concentrating plant approximately 7 miles north of Galena, Illinois at which all its ores mined from lands involved in this project can be beneficiated.

20. In exploration under this application, if approved, applicant will be searching for lead and zinc sulphide deposits of the nature common to that area.

21. All exploration will be conducted by churn drilling from the surface and such drilling is divided into three classifications: First, preliminary pattern drilling, second, structure drilling, and third, drilling to delineate the ore bodies.

The preliminary pattern drilling is indicated on the map enclosed herewith and marked Exhibit D, where the drill hole locations are shown by red circles and the depth in feet to be drilled is shown under each location.

Structure drilling will follow the pattern drilling and will be laid out to outline more closely the structures and areas of mineralization which may be disclosed by pattern drilling. Twice as many drill holes have been allotted for structure drilling on each lease as are shown for pattern drilling on the map. The average depth used is the same as the average depth of the pattern drilling.

The drilling to delineate and/or block out the ore bodies will be done after the structure drilling is completed, and one drill hole per 6 acres of area is assigned to each project for this purpose. The average depth used is the same as the average depth of the pattern drilling. The drilling allocated for each classification is as follows:

Summary of Drilling

Average Depth of Holes - 122.86 feet

	Number of Drill Holes	Footage
1. Preliminary Pattern Drilling	7	860
2. Structure Drilling	14	1,720
3. Drilling to delineate ore bodies	27	3,317
Totals	48	5,897

It is understood that the drilling under the second and third classifications will be done only in the event, in the opinion of applicant, results from drilling under the preceding classifications recommend such further activity and expenditure.

Applicant estimates that it will require a period of 18 months to complete drilling under all the classifications noted. The estimated time of first classification from time drilling begins is 5 months. For the second classification 9 months from the beginning of drilling and the third classification, 18 months from the beginning of drilling.

22. Briefly stated, applicant recommends the area herein described for prospecting for the following reasons:

1. The favorable ore horizons are known to be below the zone of oxidation in these lands.

2. The areas within a mile or two north, south and east of the areas described herein contained ore bodies in the deep favorable zinc horizons.

3. Strategic Minerals Investigations Preliminary Map 3-216, Plate 2, Sheets 1 and 2, published by the U. S. Geological Survey indicate favorable structures on these lands which have been but little prospected.

23. All drilling required under this project will be contracted to independent contractors at a cost per foot for drilling now estimated at One Dollar and Fifty Cents ($1.50) per foot. This cost might increase during the 18 months' period in accordance with the additional cost which might accrue in the same period in other lines of endeavor. However, we anticipate that there will be no substantial increase in such cost within the period necessary to complete this project. All exploration carried on hereunder will be supervised and directed by the Geological Department of the applicant and the drilling will be under the immediate supervision of two of our field geologists. The cost of the project will be the cost of the contract drilling, cost of plugging holes and the salaries of the two field geologists immediately in charge of the project.

On the basis of doing the full amount of drilling in a period of 18 months, the averaged monthly drilling schedule, cost to DMPA per month, and total maximum cost to DMPA is shown as follows:

Total maximum footage for project: 5,897

Averaged footage to be drilled per month: 328

	Estimated Cost Per Month	Estimated Total Cost For 18 Month Period
Drilling at $1.50 per foot	$491.42	$8,845.56
Plugging holes at $5.00 each	13.33	239.94
Salary of Geologists*	43.78	788.04
	$548.53	$9,873.54
50% to DMPA	$274.26	$4,936.77

* Applicant will place this project as well as others under direct supervision of a Chief Field Geologist and a Field Geologist, at salaries of $425.00 and $397.00 per month respectively. These salary costs are allocated to all exploration projects on basis of footage drilled.

Exhibit B
The Eagle-Picher Company
Project No. 4

LEASE INCLUDED IN PROJECT

1. Lease dated April 19, 1951, from Fred Heim, a single man, Lessor, to The Eagle-Picher Mining and Smelting Company, Lessee, upon the following described lands:

   The Southeast quarter of Section Twenty-nine (29), Township Two (2) North, Range One (1) East of the 4th P.M., Lafayette County, Wisconsin, containing 160 acres,

   Acres 160.00

   Total Acreage 160.00

Exhibit C
The Eagle-Picher Company
Project No. 4

MINING LEASE

THIS AGREEMENT, Made and entered into this 19th day of April, 1951, by and between Fred Heim, Cuba City, Wisconsin, a single man, hereinafter referred to as Lessors, and THE EAGLE-PICHER MINING AND SMELTING COMPANY, a Delaware corporation, hereinafter referred to as Lessee,

WITNESSETH: That,

All the covenants and obligations hereof to be kept and performed on the part of Lessors shall be deemed to be both joint and several as to such Lessors, except that any notices or demands to be made by Lessors shall be signed by all of said Lessors.

Lessors, in consideration of the sum of One Dollar ($1.00) to them in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements to be kept and performed by Lessee, its sublessees, successors or assigns, the sufficiency of which to support each and every covenant, right and privilege herein granted is hereby acknowledged, and the royalties to be paid Lessors, all as hereinafter set forth, have and by these presents do demise, lease and let to said Lessee, its successors and assigns, for the purpose of searching and prospecting for and mining lead and zinc ores and all other valuable minerals and metals, excepting coal, oil, and gas, the following described real estate, to-wit:

The Southeast quarter of Section Twenty-nine (29), Township Two (2) North, Range One (1) East of the 4th P.M., Lafayette County, Wisconsin, containing 160 acres,

for the purpose hereof considered and treated as one parcel, for the term of ten (10) years from and after the date hereof, together with the option if this lease is in force and effect on such expiration date of an extension or renewal for a like period of time thereafter; all upon the following terms and conditions, to-wit:

1. Lessee agrees to enter upon said lands leased hereby within ninety (90) days from the date hereof, and commence prospect drilling or mining operations, including such installation of such pumps as may be found necessary to handle the water that may be encountered, and thereafter conduct either prospecting or mining operations at least nine (9) months out of each year under the terms hereof, which operations shall not be suspended for more than thirty (30) days at any one time during the nine-month's working period without written permission of Lessors; Provided, however, Lessee may, at its election, pay to Lessors the sum of Twenty-five Dollars ($25.00) on or before the tenth day of each calendar month in lieu of the foregoing provisions requiring prospecting or mining on the property described herein, and such payments shall be considered as advance royalty and be deducted from the royalty payments hereafter specified herein as and when mining production is actually begun on said property; and provided, further, that Lessee shall not be required to conduct pumping, prospecting or mining operations on said lands during such times as the market price of Spelter shall be below six cents (6¢) per pound on the East St. Louis, Illinois metal market, cessation of work for this reason in no event to exceed a period of two years at any one time.

2. Lessee shall furnish to Lessors a complete log of each and every hole drilled on said lands, and where cuttings from drill holes are assayed, a copy of the assay, and at reasonable times upon request from Lessors, but not oftener than twice in any one year, a map showing definite location of each hole. Upon the completion of each hole, unless same is desired by Lessee to be kept open in connection with contemplated mining operations, Lessee shall pay to Lessors the sum of Five Dollars ($5.00) as compensation to Lessors for plugging or filling such hole, which payment shall be also in consideration of releasing Lessee from further liability or obligation in connection with the existence or condition of said hole, unless same shall thereafter be reopened by Lessee.

3. Lessee shall mine said lands in a good, thorough and workmanlike manner; shall keep all shafts cribbed and drifts timbered or otherwise supported where in the judgment of Lessee same shall appear to be necessary, and shall not remove such timbers or supports without written permission of Lessors, but shall not be liable for damages in event of caving of said lands, or any portion thereof, by reason of failure of timbers placed or pillars left to support same. Lessee shall also have the right to occupy and use so much of said lands as in its judgment may be needed to properly conduct prospecting, mining and milling operations hereunder. Lessee shall have the right to remove any buildings, structures, machinery, or equipment placed on said lands by it, at any time during the term hereof, or within One (1) year after the expiration hereof and without any rental for the use of such premises therefor. The possession of said lands for all purposes not consistent with and which do not interfere with prospecting, mining and milling hereunder, and all surplus water not used for mining operations are reserved to Lessors.

4. It is agreed that Lessee shall have the right to use the drifts and shafts of this land to haul and/or raise the ores mined from adjoining or neighboring lands, or to haul and raise ores mined from this land through drifts and shafts located on adjoining or neighboring lands. In either event Lessee shall exercise extreme care to prevent a commingling of ores from this land with ores from other lands before such ores reach the mill where they are to be milled. In the event that Lessee desires to haul underground and/or raise ores mined from adjoining or neighboring lands through drifts and shafts on this land, and Lessee is not at the same time mining ores on this land, it shall pay to Lessors the sum of Fifty Dollars ($50.00) per month for such use of Lessors' land.

5. Ores and minerals mined from this land may be cleaned and prepared for market thereon in an independent operation, or at a central concentrating plant located on this or other lands within the Tri-State Area of Illinois, Wisconsin and Iowa, separately or in connection with other ores, as Lessee may elect, and if cleaned at such a central concentrating plant shall be weighed, assayed, treated, handled and the net recoverable lead and zinc concentrates determined, disposed of, accounted for, and royalty due Lessors thereon determined, in accordance with weighing, sampling and concentrating methods recognized in the industry as practical and efficient at the time of receipt at the mill. Nothing herein shall be construed so as to permit Lessee to construct and operate a central concentrating plant on the lands herein described, without the express written consent of Lessors. Complete and permanent records shall be made and kept of said entire transaction, which shall be open to inspection and audit of Lessors or their agent at all reasonable times, and Lessors or their agents may likewise be present and observe said operation at all reasonable and seasonable times. Subject to the payment of royalty hereinafter provided, all lead and zinc concentrates or other recoverable values shall belong to Lessee. Tailings and other residues resulting from milling, in an independent operation, on the lands herein described of ores mined therefrom shall belong to Lessors, subject to Lessee's right to further treat same for recoverable minerals or metal values, during the life of this Lease. If ores mined and raised on said lands herein leased are treated and cleaned at a central concentrating plant on this or other lands, tailings and other residues resulting from said ores shall belong to Lessee.

6. Lessee shall on or before the tenth day of each calendar month pay to Lessors as rent or royalty or deposit same in _____ Bank at _____, or such other Bank as all of said Lessors may in writing hereafter designate, (such Bank, or Banks, being hereby designated and constituted as Agent of Lessors to receive such payments, and deposit in such Bank to be deemed and considered payment to Lessors), Seven and one-half per cent (7½%) of the market value of the recoverable lead and zinc concentrates contained in the ores mined and milled and sold on the premises, or taken therefrom for milling, during the preceding calendar month, with a statement showing the amount, quality, kind and weight, and the value thereof. "Concentrates" is hereby defined to mean the salable zinc and/or lead mineral as recoverable at the mill or concentrating plant where treated, including in addition to lead or zinc metal any and all other metals, or elements contained in such concentrates, whether or not such metals or elements are by presently known or by future discovered methods of recovery rendered valuable. "Market Value" is hereby defined for the purposes hereof to be, (a) the value of concentrates resulting from ores mined from lands herein leased and milled in an independent operation on the premises as based upon the market price established in the Tri-State District of Illinois, Wisconsin and Iowa for concentrates of a similar grade and

kind and prevailing at the time said concentrates are disposed of; and/or, (b) the value of the recoverable concentrates, as shown by assay, contained in the ores taken to a central mill, based upon the market price prevailing in the Tri-State District for similar concentrates at the time said ores are delivered to the Mill for treatment. Lessors shall have no interest in any bonus or premium paid to Lessee by the United States Government or any agency thereof on the ores and minerals produced from the premises nor shall any royalty be paid on said bonus or premium. The same rate of royalty shall be paid in the same manner on all iron concentrates recovered and marketed separately by Lessee from the ores mined from said premises hereunder.

7. During the prospecting period as herein provided for, Lessee shall keep all gates on the premises closed and shall pay Lessors for actual damage to growing crops caused by prospecting operations hereunder. In the event that mining operations are commenced on said premises Lessee agrees upon written request from Lessors to construct cattle guards in place of gates used by Lessee in entering or leaving said property. It is further agreed that Lessee will not sink any shaft or erect any mill within three hundred feet (300') of any dwelling or other principal farm buildings located on the premises herein described without the written consent of Lessors.

8. Lessors agree to pay their proportionate part of any taxes assessed or levied by the State in which said lands are located, or any subdivision thereof, or by the Federal Government, against ores or minerals produced from said lands.

9. Lessors hereby warrant and agree to defend the title to the lands leased herein, and Lessee is hereby given and shall at all times during the life hereof have the right, but is not obliged, to pay taxes, mortgages or other liens which may be due and payable in the event of default of payment by Lessors, in which event Lessee shall be subrogated to all the rights of the holder thereof.

10. In case of failure of Lessee to keep and perform the terms and obligations of this Lease, Lessors may give thirty (30) days' written notice of the breach or violation complained of, and if such violation or default is not removed or corrected in said period, provided the same can be remedied within that time, this Lease shall thereupon terminate at the option of Lessors, which shall be evidenced by notice in writing to Lessee, and which remedy shall be exclusive, provided, however, that no forfeiture shall be asserted or based on cessations or delays in operations hereunder when occassioned by fire, riot or civil commotion, strikes, or other labor controversies, operations of law or interference of Government Agencies, acts of nature, or other causes beyond the control of Lessee at the time of occurrence whether or not same could have been foreseen or prevented. Notices in this paragraph provided shall be given by mailing same to Lessee at Miami, Oklahoma, by registered mail and the time of the notice shall start to run from date of delivery.

11. Lessee may at any time and is hereby given permission to surrender this Lease by executing and tendering to Lessors a written release hereof, and from and after such tender shall be released and relieved from all further obligations or liability hereunder except to account for and pay royalties accrued during the life hereof. Tender of such release may be made by delivering same to any Lessor in person or by depositing the same with any official or employee of the Bank at such time acting as Agent for Lessors to receive payment or royalties hereunder; or by recording in the office of the Recorder of Deeds of the County in which said lands are located, of such release, and paying the recording fee. Upon termination of this Lease from any cause, upon request, Lessee will furnish Lessors with a copy of the most recent map in the possession of Lessee showing the underground workings.

12. This Lease shall run to and be binding upon each of the parties hereto, their heirs, legatees, legal representatives, successors, sublessees or assigns, respectively.

In Witness Whereof, the Lessors have hereunto set their hands and seals, and the Lessee has caused its name to be subscribed by its proper officers, the day and year first hereinabove set out.

Signed by Fred Heim

(S) Fred Heim
Fred Heim

In the presence of:

(S) W. H. Poole
W. H. Poole
(S) M. B. Gibbons
M. B. Gibbons
Witnesses

Signed by

In the presence of:

Witnesses

Signed by Elmer Isern

In the presence of:

(S) Corbin Shouse
(S) Glenn Messersmith
Witnesses

Lessors

The Eagle-Picher Mining and Smelting Company

((SEAL))

By (S) Elmer Isern
Elmer Isern, President

Attest:

(S) Kenneth E. Kimmel
Kenneth E. Kimmel, Assistant Secretary

Lessee

State of Wisconsin)
) ss.
County of Grant)

Be it remembered, that on this 19th day of April, 1951, before me, the undersigned, a Notary Public within and for the County and State aforesaid, came Fred Heim - a single man -, who are personally known to me to be the same persons who executed the within and foregoing instrument of writing, and such persons duly acknowledged the execution of the same.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

((SEAL)) (S) M. B. Gibbons
M. B. Gibbons, Notary Public,
Grant County, Wisconsin

My Commission Expires:

August 19, 1951

State of _____)
) ss.
County of _____)

Be it remembered, that on this _____ day of _____, 19___, before me, the undersigned, a Notary Public within and for the County and State aforesaid, came _____, who are personally known to me to be the same persons who executed the within and foregoing instrument of writing, and such persons duly acknowledged the execution of the same.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

_____
Notary Public

My Commission Expires:

_____

State of Oklahoma)
) ss.
County of Ottawa)

Be it remembered that on this 7th day of May, 1951, before me, the undersigned, a Notary Public in and for the County and State aforesaid, came Elmer Isern, President of The Eagle-Picher Mining and Smelting Company, a corporation, who is personally known to me to be such officer, and who is personally known to me to be the person who executed as such officer the within instrument of writing on behalf of such corporation, and such person duly acknowledged the execution of the same to be the act and deed of said corporation and in accordance with the laws of the State of Oklahoma.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

((SEAL)) (S) L. Lucile Bean
Notary Public

My Commission Expires:

My Commission Expires May 19, 1952.

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. DMEA-2401

Date received 3-3-52

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 3 - 1952

The Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application February 25, 1952

Estimated cost

Mineral or metal Lead and zinc

Percentage of Government participation ~~50%~~

Location of ~~mine~~ project - See Below

Eagle-Picher Project No. 4

Date of filing MF-100

DMA Docket Number, if available

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.

Answer to all questions which seem applicable are made on Exhibit A attached and made a part hereof.

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, 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.

The Anglo-Pichor Company
Mining and Smelting Division
(Name of company)

By Elmer Isern
(Signature of authorized official) Elmer Isern

February 25, 1952
(Date)

Vice-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

Exhibit A
The Eagle-Picher Company
Project No. 4

1. The applicant, The Eagle-Picher Company, is a corporation organized and existing under the laws of the State of Ohio, with main offices at American Building, Cincinnati, Ohio. This application is being made by the Mining and Smelting Division of the above named corporation, which division of the Company maintains its main office at First National Bank Building, Miami, Oklahoma. All correspondence in connection with this application should be with the applicant at the Miami, Oklahoma address.

3. The name and address of the officers, directors and five largest stockholders of The Eagle-Picher Company are as follows:

Officers:

Joel M. Bowlby, Chairman of Board
American Building, Cincinnati, Ohio

T. Spencer Shore, President
American Building, Cincinnati, Ohio

William R. Dice, Vice-President and Comptroller
American Building, Cincinnati, Ohio

Carl A. Geist, Vice-President, Secretary & Treasurer
American Building, Cincinnati, Ohio

Elmer Isern, Vice-President
Miami, Oklahoma

Miles M. Zoller, Vice-President
American Building, Cincinnati, Ohio

Carl F. Hertenstein, Assistant Treasurer
Twelfth and Vine Streets, Cincinnati, Ohio

Richard Serviss, Assistant Secretary
American Building, Cincinnati, Ohio

Kenneth E. Kimmel, Assistant Secretary
Miami, Oklahoma

Board of Directors:

Joel M. Bowlby, Chairman
Carl A. Geist
Carl F. Hertenstein
Elmer Isern
Stanley R. Miller
30 Pine Street, New York, N. Y.
William H. Mitchell
Cincinnati, Ohio
John J. Rowe
Fourth and Walnut Streets, Cincinnati, Ohio
T. Spencer Shore
Miles M. Zoller
George A. Spiva
Spiva Building, Joplin, Missouri

Five Largest Shareholders	Shares
Carl F. Hertenstein c/o The Western Bank & Trust Co. Twelfth and Vine Streets Cincinnati, Ohio	64,282
Katherine H. Watson 1625 Beach Drive St. Petersburg 4, Florida	23,280
Baker, Weeks & Harden One Wall Street New York, N. Y.	18,248
Carolyn L. Moser c/o Trust Department The Western Bank & Trust Co. Twelfth and Vine Streets Cincinnati, Ohio	17,130
Merrill, Lynch, Pierce, Fenner & Beane 70 Pine Street New York, N. Y.	15,861

4. The Eagle-Picher Company has engaged in the business of exploration, mining, smelting and fabrication of lead and zinc products since about the year 1920. It operated in the Tri-State Lead and Zinc District of Miami, Oklahoma and Kansas for many years under the name of The Eagle-Picher Lead Company. Since about 1930 its lead and zinc mining and smelting operations have been carried on through its wholly owned subsidiary, The Eagle-Picher Mining and Smelting Company. The subsidiary company was dissolved November 30, 1951, and all its operations, including its assets and liabilities, were taken over by the parent company. Since that date the mining and smelting operations of the Company have been continued under the name of The Eagle-Picher Company, (Mining and Smelting Division), Miami, Oklahoma. The Company has extensive lead and zinc mines in the Tri-State District of Kansas, Oklahoma and Missouri. It operates lead and zinc mines in the vicinity of Tucson, Arizona, in the province of Chihuahua, Mexico and in the County of Jo Daviess, Illinois, and Grant and Lafayette Counties, Wisconsin. It operates a large zinc and lead central concentrating plant near Picher, Oklahoma, a lead and zinc central concentrating plant near Galena, Illinois, a central concentrating plant near Tucson, Arizona, a concentrating plant at its Mexican properties, as well as various lead and zinc smelters at Henryetta, Oklahoma, Galena, Kansas, East Chicago and Hillsboro, Illinois. The Mining and Smelting Division of the Company has carried on extensive exploration operations in the Tri-State District of Kansas, Oklahoma and Missouri for many years. For the past several years it has carried on extensive exploration in Jo Daviess County, Illinois and Grant and Lafayette Counties, Wisconsin, as well as exploration in other localities.

5. The applicant holds title and the right to mine the properties described in this application as Lessee under leases granted directly to its subsidiary, The Eagle-Picher Mining and Smelting Company, by the owners of the land. The leases as to each property are exactly the same, except as to dates and names of lessors and property involved, and except for an occasional very minor modification of no significance whatever to this application. Therefore, in the interest of brevity, in Exhibit B attached hereto and made a part hereof, we identify each lease as to landowners, date and property covered and we also attach a copy of one of the leases marked Exhibit C and made a part hereof, as representative of all the leases involved. All leases referred to in this application are in good standing.

7. We propose to use, in lieu of subordination agreements from the landowners, the form of Guaranty Contract recently approved by the Department for use by Vinegar Hill Zinc Company in its proposed contracts with the Government covering the same activity in the Tri-State Area of Wisconsin, Illinois and Iowa.

8. This application is one of four applications covering four different projects which applicant is filing at this time with DMPA. In lieu of the request for current financial statement and a profit and loss statement, we are submitting along with all various applications one copy of our annual statement for the fiscal year ending November 30, 1950. We trust that this may be acceptable for the purpose of furnishing the information described. The annual statement of our Company for the fiscal year ending November 30, 1951, is not available as yet, but if desired we can forward it to the Department as soon as it is available, which should be very soon, or furnish such other information of that nature immediately as the Department may request.

9. The applicant has ample funds which it is prepared to invest in the proposed project in accordance with the representations herein.

12. The properties described herein are located approximately 11 miles north of Galena, Illinois and near State Highway 80. The closest shipping point, we believe, is Galena, Illinois. Certainly there are ample roads and shipping facilities convenient to the area involved.

13. There is an abundance of underground water throughout the area involved in this application, sufficient to carry on any exploration hereunder and sufficient to any mining or beneficiation which may result from explorations hereunder. The same is true of electric power.

15. In the event any ore bodies are developed and mined by the applicant as a result of explorations hereunder, it now maintains and operates an efficient and modern lead and zinc concentrating plant approximately 7 miles north of Galena, Illinois at which all its ores mined from lands involved in this project can be beneficiated.

20. In exploration under this application, if approved, applicant will be searching for lead and zinc sulphide deposits of the nature common to that area.

21. All exploration will be conducted by churn drilling from the surface and such drilling is divided into three classifications: First, preliminary pattern drilling, second, structure drilling, and third, drilling to delineate the ore bodies.

The preliminary pattern drilling is indicated on the map enclosed herewith and marked Exhibit D, where the drill hole locations are shown by red circles and the depth in feet to be drilled is shown under each location.

Structure drilling will follow the pattern drilling and will be laid out to outline more closely the structures and areas of mineralization which may be disclosed by pattern drilling. Twice as many drill holes have been allotted for structure drilling on each lease as are shown for pattern drilling on the map. The average depth used is the same as the average depth of the pattern drilling.

The drilling to delineate and/or block out the ore bodies will be done after the structure drilling is completed, and one drill hole per 6 acres of area is assigned to each project for this purpose. The average depth used is the same as the average depth of the pattern drilling. The drilling allocated for each classification is as follows:

Summary of Drilling

Average Depth of Holes - 122.86 feet

	Number of Drill Holes	Footage
1. Preliminary Pattern Drilling	7	860
2. Structure Drilling	14	1,720
3. Drilling to delineate ore bodies	27	3,317
Totals	48	5,897

It is understood that the drilling under the second and third classifications will be done only in the event, in the opinion of applicant, results from drilling under the preceding classifications recommend such further activity and expenditure.

Applicant estimates that it will require a period of 18 months to complete drilling under all the classifications noted. The estimated time of first classification from time drilling begins is 5 months. For the second classification 9 months from the beginning of drilling and the third classification, 18 months from the beginning of drilling.

22. Briefly stated, applicant recommends the area herein described for prospecting for the following reasons:

1. The favorable ore horizons are known to be below the zone of oxidation in these lands.

2. The areas within a mile or two north, south and east of the areas described herein contained ore bodies in the deep favorable zinc horizons.

3. Strategic Minerals Investigations Preliminary Map 3-216, Plate 2, Sheets 1 and 2, published by the U. S. Geological Survey indicate favorable structures on these lands which have been but little prospected.

23. All drilling required under this project will be contracted to independent contractors at a cost per foot for drilling now estimated at One Dollar and Fifty Cents ($1.50) per foot. This cost might increase during the 18 months' period in accordance with the additional cost which might accrue in the same period in other lines of endeavor. However, we anticipate that there will be no substantial increase in such cost within the period necessary to complete this project. All exploration carried on hereunder will be supervised and directed by the Geological Department of the applicant and the drilling will be under the immediate supervision of two of our field geologists. The cost of the project will be the cost of the contract drilling, cost of plugging holes and the salaries of the two field geologists immediately in charge of the project.

On the basis of doing the full amount of drilling in a period of 18 months, the averaged monthly drilling schedule, cost to DMPA per month, and total maximum cost to DMPA is shown as follows:

Total maximum footage for project: 5,897

Averaged footage to be drilled per month: 328

	Estimated Cost Per Month	Estimated Total Cost For 18 Month Period
Drilling at $1.50 per foot	$491.42	$8,845.56
Plugging holes at $5.00 each	13.33	239.94
Salary of Geologists*	43.78	788.04
	$548.53	$9,873.54
50% to DMPA	$274.26	$4,936.77

* Applicant will place this project as well as others under direct supervision of a Chief Field Geologist and a Field Geologist, at salaries of $425.00 and $397.00 per month respectively. These salary costs are allocated to all exploration projects on basis of footage drilled.

Exhibit B
The Eagle-Picher Company
Project No. 4

LEASE INCLUDED IN PROJECT

1. Lease dated April 19, 1951, from Fred Heim, a single man, Lessor, to The Eagle-Picher Mining and Smelting Company, Lessee, upon the following described lands:

The Southeast quarter of Section Twenty-nine (29), Township Two (2) North, Range One (1) East of the 4th P.M., Lafayette County, Wisconsin, containing 160 acres,

Acres 160.00

Total Acreage 160.00

Exhibit C
The Eagle-Picher Company
Project No. 4

MINING LEASE

THIS AGREEMENT, Made and entered into this 19th day of April, 1951, by and between Fred Heim, Cuba City, Wisconsin, a single man, hereinafter referred to as Lessors, and THE EAGLE-PICHER MINING AND SMELTING COMPANY, a Delaware corporation, hereinafter referred to as Lessee,

WITNESSETH: That,

All the covenants and obligations hereof to be kept and performed on the part of Lessors shall be deemed to be both joint and several as to such Lessors, except that any notices or demands to be made by Lessors shall be signed by all of said Lessors.

Lessors, in consideration of the sum of One Dollar ($1.00) to them in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements to be kept and performed by Lessee, its sublessees, successors or assigns, the sufficiency of which to support each and every covenant, right and privilege herein granted is hereby acknowledged, and the royalties to be paid Lessors, all as hereinafter set forth, have and by these presents do demise, lease and let to said Lessee, its successors and assigns, for the purpose of searching and prospecting for and mining lead and zinc ores and all other valuable minerals and metals, excepting coal, oil, and gas, the following described real estate, to-wit:

The Southeast quarter of Section Twenty-nine (29), Township Two (2) North, Range One (1) East of the 4th P.M., Lafayette County, Wisconsin, containing 160 acres,

for the purpose hereof considered and treated as one parcel, for the term of ten (10) years from and after the date hereof, together with the option if this lease is in force and effect on such expiration date of an extension or renewal for a like period of time thereafter; all upon the following terms and conditions, to-wit:

1. Lessee agrees to enter upon said lands leased hereby within ninety (90) days from the date hereof, and commence prospect drilling or mining operations, including such installation of such pumps as may be found necessary to handle the water that may be encountered, and thereafter conduct either prospecting or mining operations at least nine (9) months out of each year under the terms hereof, which operations shall not be suspended for more than thirty (30) days at any one time during the nine-month's working period without written permission of Lessors; Provided, however, Lessee may, at its election, pay to Lessors the sum of Twenty-five Dollars ($25.00) on or before the tenth day of each calendar month in lieu of the foregoing provisions requiring prospecting or mining on the property described herein, and such payments shall be considered as advance royalty and be deducted from the royalty payments hereafter specified herein as and when mining production is actually begun on said property; and provided, further, that Lessee shall not be required to conduct pumping, prospecting or mining operations on said lands during such times as the market price of Spelter shall be below six cents (6¢) per pound on the East St. Louis, Illinois metal market, cessation of work for this reason in no event to exceed a period of two years at any one time.

2. Lessee shall furnish to Lessors a complete log of each and every hole drilled on said lands, and where cuttings from drill holes are assayed, a copy of the assay, and at reasonable times upon request from Lessors, but not oftener than twice in any one year, a map showing definite location of each hole. Upon the completion of each hole, unless same is desired by Lessee to be kept open in connection with contemplated mining operations, Lessee shall pay to Lessors the sum of Five Dollars ($5.00) as compensation to Lessors for plugging or filling such hole, which payment shall be also in consideration of releasing Lessee from further liability or obligation in connection with the existence or condition of said hole, unless same shall thereafter be reopened by Lessee.

3. Lessee shall mine said lands in a good, thorough and workmanlike manner; shall keep all shafts cribbed and drifts timbered or otherwise supported where in the judgment of Lessee same shall appear to be necessary, and shall not remove such timbers or supports without written permission of Lessors, but shall not be liable for damages in event of caving of said lands, or any portion thereof, by reason of failure of timbers placed or pillars left to support same. Lessee shall also have the right to occupy and use so much of said lands as in its judgment may be needed to properly conduct prospecting, mining and milling operations hereunder. Lessee shall have the right to remove any buildings, structures, machinery, or equipment placed on said lands by it, at any time during the term hereof, or within One (1) year after the expiration hereof and without any rental for the use of such premises therefor. The possession of said lands for all purposes not consistent with and which do not interfere with prospecting, mining and milling hereunder, and all surplus water not used for mining operations are reserved to Lessors.

4. It is agreed that Lessee shall have the right to use the drifts and shafts of this land to haul and/or raise the ores mined from adjoining or neighboring lands, or to haul and raise ores mined from this land through drifts and shafts located on adjoining or neighboring lands. In either event Lessee shall exercise extreme care to prevent a commingling of ores from this land with ores from other lands before such ores reach the mill where they are to be milled. In the event that Lessee desires to haul underground and/or raise ores mined from adjoining or neighboring lands through drifts and shafts on this land, and Lessee is not at the same time mining ores on this land, it shall pay to Lessors the sum of Fifty Dollars ($50.00) per month for such use of Lessors' land.

5. Ores and minerals mined from this land may be cleaned and prepared for market thereon in an independent operation, or at a central concentrating plant located on this or other lands within the Tri-State Area of Illinois, Wisconsin and Iowa, separately or in connection with other ores, as Lessee may elect, and if cleaned at such a central concentrating plant shall be weighed, assayed, treated, handled and the net recoverable lead and zinc concentrates determined, disposed of, accounted for, and royalty due Lessors thereon determined, in accordance with weighing, sampling and concentrating methods recognized in the industry as practical and efficient at the time of receipt at the mill. Nothing herein shall be construed so as to permit Lessee to construct and operate a central concentrating plant on the lands herein described, without the express written consent of Lessors. Complete and permanent records shall be made and kept of said entire transaction, which shall be open to inspection and audit of Lessors or their agent at all reasonable times, and Lessors or their agents may likewise be present and observe said operation at all reasonable and seasonable times. Subject to the payment of royalty hereinafter provided, all lead and zinc concentrates or other recoverable values shall belong to Lessee. Tailings and other residues resulting from milling, in an independent operation, on the lands herein described of ores mined therefrom shall belong to Lessors, subject to Lessee's right to further treat same for recoverable minerals or metal values, during the life of this Lease. If ores mined and raised on said lands herein leased are treated and cleaned at a central concentrating plant on this or other lands, tailings and other residues resulting from said ores shall belong to Lessee.

6. Lessee shall on or before the tenth day of each calendar month pay to Lessors as rent or royalty or deposit same in _____ Bank at _____, or such other Bank as all of said Lessors may in writing hereafter designate, (such Bank, or Banks, being hereby designated and constituted as Agent of Lessors to receive such payments, and deposit in such Bank to be deemed and considered payment to Lessors), Seven and one-half per cent (7½%) of the market value of the recoverable lead and zinc concentrates contained in the ores mined and milled and sold on the premises, or taken therefrom for milling, during the preceding calendar month, with a statement showing the amount, quality, kind and weight, and the value thereof. "Concentrates" is hereby defined to mean the salable zinc and/or lead mineral as recoverable at the mill or concentrating plant where treated, including in addition to lead or zinc metal any and all other metals, or elements contained in such concentrates, whether or not such metals or elements are by presently known or by future discovered methods of recovery rendered valuable. "Market Value" is hereby defined for the purposes hereof to be, (a) the value of concentrates resulting from ores mined from lands herein leased and milled in an independent operation on the premises as based upon the market price established in the Tri-State District of Illinois, Wisconsin and Iowa for concentrates of a similar grade and

kind and prevailing at the time said concentrates are disposed of; and/or, (b) the value of the recoverable concentrates, as shown by assay, contained in the ores taken to a central mill, based upon the market price prevailing in the Tri-State District for similar concentrates at the time said ores are delivered to the Mill for treatment. Lessors shall have no interest in any bonus or premium paid to Lessee by the United States Government or any agency thereof on the ores and minerals produced from the premises nor shall any royalty be paid on said bonus or premium. The same rate of royalty shall be paid in the same manner on all iron concentrates recovered and marketed separately by Lessee from the ores mined from said premises hereunder.

7. During the prospecting period as herein provided for, Lessee shall keep all gates on the premises closed and shall pay Lessors for actual damage to growing crops caused by prospecting operations hereunder. In the event that mining operations are commenced on said premises Lessee agrees upon written request from Lessors to construct cattle guards in place of gates used by Lessee in entering or leaving said property. It is further agreed that Lessee will not sink any shaft or erect any mill within three hundred feet (300') of any dwelling or other principal farm buildings located on the premises herein described without the written consent of Lessors.

8. Lessors agree to pay their proportionate part of any taxes assessed or levied by the State in which said lands are located, or any subdivision thereof, or by the Federal Government, against ores or minerals produced from said lands.

9. Lessors hereby warrant and agree to defend the title to the lands leased herein, and Lessee is hereby given and shall at all times during the life hereof have the right, but is not obliged, to pay taxes, mortgages or other liens which may be due and payable in the event of default of payment by Lessors, in which event Lessee shall be subrogated to all the rights of the holder thereof.

10. In case of failure of Lessee to keep and perform the terms and obligations of this Lease, Lessors may give thirty (30) days' written notice of the breach or violation complained of, and if such violation or default is not removed or corrected in said period, provided the same can be remedied within that time, this Lease shall thereupon terminate at the option of Lessors, which shall be evidenced by notice in writing to Lessee, and which remedy shall be exclusive, provided, however, that no forfeiture shall be asserted or based on cessations or delays in operations hereunder when occassioned by fire, riot or civil commotion, strikes, or other labor controversies, operations of law or interference of Government Agencies, acts of nature, or other causes beyond the control of Lessee at the time of occurrence whether or not same could have been foreseen or prevented. Notices in this paragraph provided shall be given by mailing same to Lessee at Miami, Oklahoma, by registered mail and the time of the notice shall start to run from date of delivery.

11. Lessee may at any time and is hereby given permission to surrender this Lease by executing and tendering to Lessors a written release hereof, and from and after such tender shall be released and relieved from all further obligations or liability hereunder except to account for and pay royalties accrued during the life hereof. Tender of such release may be made by delivering same to any Lessor in person or by depositing the same with any official or employee of the Bank at such time acting as Agent for Lessors to receive payment or royalties hereunder; or by recording in the office of the Recorder of Deeds of the County in which said lands are located, of such release, and paying the recording fee. Upon termination of this Lease from any cause, upon request, Lessee will furnish Lessors with a copy of the most recent map in the possession of Lessee showing the underground workings.

12. This Lease shall run to and be binding upon each of the parties hereto, their heirs, legatees, legal representatives, successors, sublessees or assigns, respectively.

In Witness Whereof, the Lessors have hereunto set their hands and seals, and the Lessee has caused its name to be subscribed by its proper officers, the day and year first hereinabove set out.

Signed by Fred Heim

(S) Fred Heim
Fred Heim

In the presence of:

(S) W. H. Poole
W. H. Poole
(S) M. D. Gibbons
M. D. Gibbons
Witnesses

Signed by

In the presence of:

Witnesses

Signed by Elmer Isern

In the presence of:

(S) Corbin Shouse
(S) Glenn Wesserasmith
Witnesses

Lessors

The Eagle-Picher Mining and Smelting Company

((SEAL))

By (S) Elmer Isern
Elmer Isern, President

Attest:

(S) Kenneth E. Kimmel
Kenneth E. Kimmel, Assistant Secretary

Lessee

State of Wisconsin)
) ss.
County of Grant)

Be it remembered, that on this 19th day of April, 1951, before me, the undersigned, a Notary Public within and for the County and State aforesaid, came Fred Heim - a single man -, who are personally known to me to be the same persons who executed the within and foregoing instrument of writing, and such persons duly acknowledged the execution of the same.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

((SEAL)) (S) M. D. Gibbons
M. D. Gibbons, Notary Public,
Grant County, Wisconsin

My Commission Expires:

August 19, 1951

State of _____)
) ss.
County of _____)

Be it remembered, that on this _____ day of _____, 19___, before me, the undersigned, a Notary Public within and for the County and State aforesaid, came _____, who are personally known to me to be the same persons who executed the within and foregoing instrument of writing, and such persons duly acknowledged the execution of the same.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

_____
Notary Public

My Commission Expires:

_____

State of Oklahoma)
) ss.
County of Ottawa)

Be it remembered that on this 7th day of May, 1951, before me, the undersigned, a Notary Public in and for the County and State aforesaid, came Elmer Isern, President of The Eagle-Picher Mining and Smelting Company, a corporation, who is personally known to me to be such officer, and who is personally known to me to be the person who executed as such officer the within instrument of writing on behalf of such corporation, and such person duly acknowledged the execution of the same to be the act and deed of said corporation and in accordance with the laws of the State of Oklahoma.

In Testimony Whereof, I have hereunto set my hand and affixed my Notarial seal the day and year last above written.

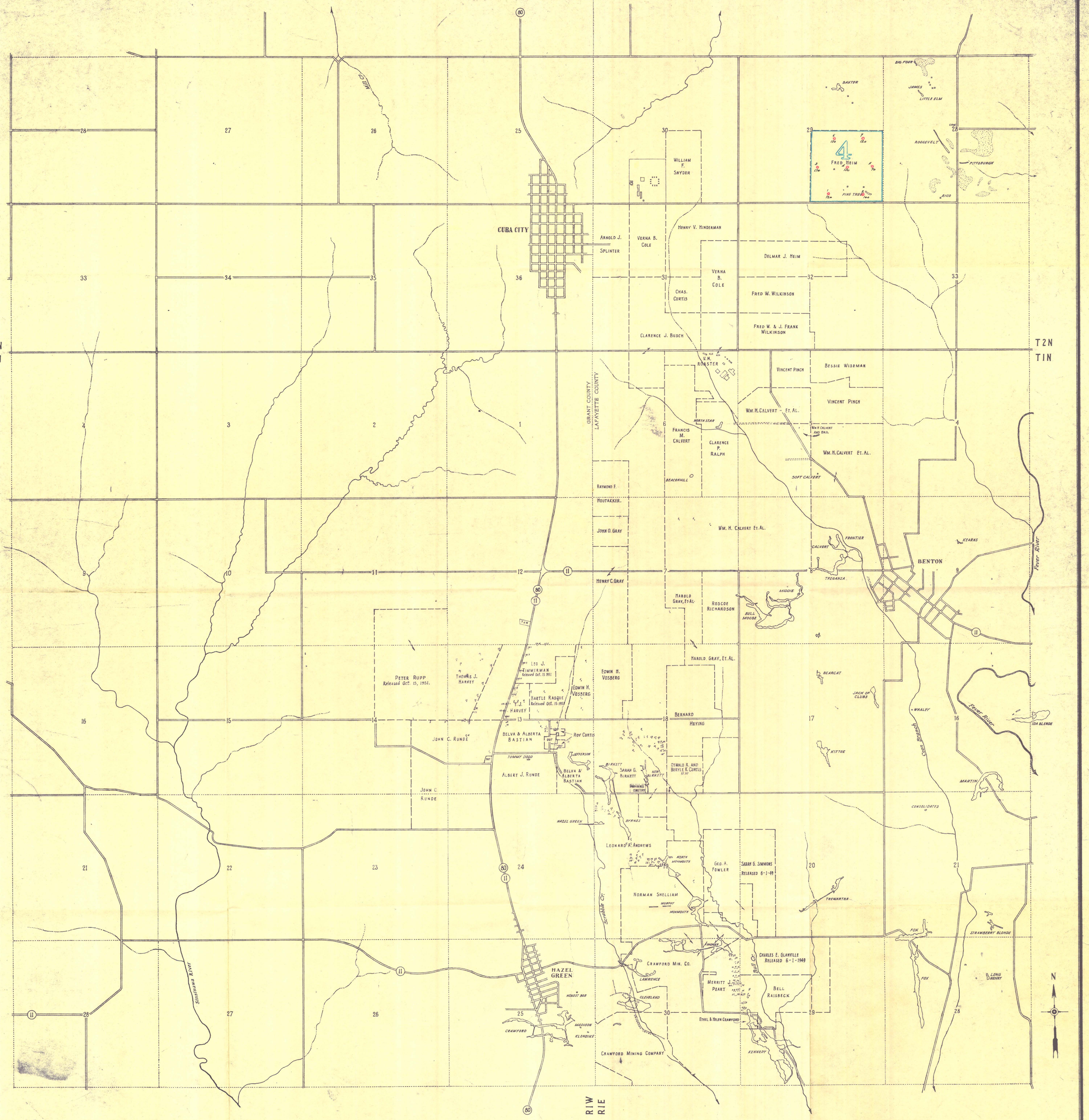
((SEAL)) (S) L. Lucile Boan
Notary Public

My Commission Expires:

My Commission Expires May 19, 1952.

DMEA-2401
EAGLE-PICHER
COMPANY

EXHIBIT D
THE EAGLE-PICHER COMPANY
PROJECT NO. 4



EAGLE-PICHER
MINING & SMELTING CO

PART OF GRANT & LAFAYETTE COUNTIES

WISCONSIN LEASE MAP

SCALE, 4 IN. = 1 MILE

4

DRAFTING BY GREELY

FILE IN WISCONSIN GENERAL POCKET