DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 1717 X

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as

EXPLORATION LOAN

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.

Routing Slip

To:	~~SUPPLY DIVISION~~	Date	JUL 31 1951
To:	Mattendorf	Date	8-2-51
To:	Lyons	Date	8-28-51
To:	Lewis Lyons	Date	[illegible]
To:	Cont Committee	Date	9-5-51
To:	R & R	Date	SEP 11 1951
To:		Date	
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INT.-DUP. SEC., WASH., D.C. 98868

DMA Form 2

DEFENSE MINERALS ADMINISTRATION
Status Change Notice

DMA Docket No. 1717 1

To: Reports and Records Branch W. Henry Duckworth, M.D.

From: LEAD ZINC BRANCH

Date: JUL 6 1951

The following action has been taken this date on the above Controlled Document.

Forwarded to

Type of request changed to:

Denied ☐ Withdrawn ☐

Approved in amount of $

Other action, specify:

On hand

FILE COPY
SURNAME:

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

DEC 4 1952

Dr. W. H. Duckworth
St. Clair,
Missouri

Re: Docket No. [illegible]A-1717X (Lead-Zinc)
Franklin County, Missouri

Dear Dr. Duckworth:

Since this office has not received a reply to our letter of November 4, 1952, advising you that the subject docket would be closed if you did not inform us that you were still interested in the application before November 30, we regret to inform you that the subject docket has been closed and removed from the active file.

If at any time in the future you wish to continue with the proposed exploration project, you can file a new application or request that the subject application be re-opened.

I wish to thank you for your interest in bringing your property to the attention of the Government.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Administrator

12-4-52

HFKeller/bjl/hmj
12-2-52
CC to: Adm. Reading File
Operating Committee
Docket File Copy
Mr. Keller (2)
Region VI (2)
Mr. Kinkle
Mr. Bishop

FILE COPY
SURNAME:

H F Keller

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

500

NOV 4 1952

Dr. W. H. Duckworth, ~~M. D.~~
St. Clair,
Missouri

Re: Docket No. 1717X (Lead-Zinc)
Franklin County, Missouri

Dear Dr. Duckworth:

Reference is made to our letter of April 10, 1952, in which we requested more information and supporting documents.

Since we have received no reply to that letter, we assume that you are no longer interested in the application. If that is not the case, we would appreciate hearing from you before November 30, 1952. Otherwise, on that date, we shall close the subject docket and remove it from the active files.

If at any time in the future you wish to continue with the proposed exploration project we shall be pleased to reconsider your application.

Sincerely yours,

C. O. Mittendorf

Administrator

HFKeller/bw
(written 10/21/52)
Copy to:
Docket
Adm. R. File
Op. Comm.
H. F. Keller (2)
Mr. Bishop
Mr. McKnight
Reg. VI(2)
Chron.

H.F. 11-4-52

500

Docket

FILE COPY
SURNAME:

Moulds

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

APR 10 1952

Mr. W. H. Duckworth, M. D.
St. Clair,
Missouri

Re: Docket DMEA 1717X
Lead-Zinc

Dear Mr. Duckworth:

We acknowledge receipt of your application for exploration assistance on form MF-100 and drilling agreement between W. I. McKelvey and Arthur Smith, covering one hole to a depth of 600' at $2.00 per foot.

As this project appears to be considerably different from the original project under docket DMEA 1717, we will require the additional information listed in Form MF-103. We are, therefore, enclosing five copies of this form and request that you present the information requested in as complete detail as possible.

We also note that on Form MF-100, you are listed as the applicant and that the operation is going to be under a partnership basis. It, therefore, appears that the application should be presented in the name of the partnership or as a partnership doing business as W. Henry Duckworth.

If the application is to be considered as a partnership, the property will necessarily have to be leased or assigned to the partnership and a copy of the appropriate instrument attached to the applications. Six copies of Landlords consent to lien will also be required.

Upon receipt of the above mentioned information and documents your project will be given full consideration.

Sincerely yours,

D. E. Moulds (meh)

J.N. 4-10-52

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

Enclosures

DEMoulds/meh/hmj 4-9-52

CC to: Adm. Reading File
Mr. Bishop
Region VI
Mr. Moulds

Docket File Copy
Mr. McKnight

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

To: Production Expansion Division

From: Director, Supply Division

Docket No. 1717X

Commodity Lead, zinc

Total Amount $22,000

Govt. Participation 50%

1. Name and Address of Applicant W. Henry Duckworth, M.D., St. Clair, Missouri

2. Location of Property 2 miles east of St. Clair, Franklin County, Missouri SW 1/4 and W 1/2 SE 1/4 sec. 32, T. 42 N. R 1 E; and W 1/2 NE 1/4 sec. 5, T. 41 N., R 1 E.

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 See attached comment

b) Poor

c) None

d) Don't know—needs field examination

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

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

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

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

*question numbers are those of MF-103

4. (a) Applicant proposes to drill 10 holes to a depth of about 1100 feet to test the horizon at which "mining engineers" predict that a very satisfactory mineral strike should be made. Although he has presented the geologic basis only as a matter of hearsay, his plan is the correct one for worthwhile prospecting in this area.

Study of the published geologic map of Missouri shows that the outcropping formation on this tract is probably the Gasconade dolomite. This formation has widespread but narrow lead veins which were important in the early history of lead mining in Missouri but which have been of little importance in the last 50 years because of being too expensive to mine. Some of these deposits are on the applicant's land. On the other hand, the formation containing the disseminated lead deposits from which the large production of southeastern Missouri has come in the last 80 years is the Bonneterre dolomite which lies several hundred feet below the Gasconade.

The St. Joseph Lead Company in the last 10 years has done wildcat drilling west and north of the producing field to see if a new deposit could be discovered at depth in the Bonneterre. Particularly favorable localities would be areas containing lead veins in the higher formations, the assumption being that with lead-bearing solutions coming up from the earth's depths, any lead in higher formations would be indicative of a possible disseminated deposit in the underlying Bonneterre. By this prospecting method, the Indian Creek deposit was discovered, which represents the most importany really new lead discovery in the last decade. A shaft is at present being sunk to a depth of about 1000 ft. A 1000 ton mill is being constructed, and in all $5,000,000 is being invested in the project with the first production expected 2 ~~or 3~~ years hence.

This Indian Creek deposit is about 20 miles south of applicant's land. Its discovery has stimulated similar exploration by other large companies in his area, as mentioned by applicant. The Indian Creek deposit is on the flank of a magnetic high as shown on the magnetic map of Missouri prepared by the Missouri Division of Geological Survey and Water Resources. A different but similarly shaped magnetic high occurs in the area of the applicant's holdings and his proposed drill holes will test a position on this magnetic structure somewhat lower on the flank than that occupied by the St. Joseph-Indian Creek deposit. Significance of these magnetic structures is not known for sure, but if they represent buried pre-Cambrian hills, as seems likely, the structural conditions surrounding such hills have long been recognized as favorable prospecting ground in the Missouri lead area.

The chance of finding ore by 10 drill holes on the applicant's land is a longer shot gamble than for many other projects recommended to the Production Expansion Division, but the stakes are big. It is a worthwhile venture under DMA's exploration program

The applicant should have geologic guidance to tell when he has penetrated the Bonneterre dolomite, for it would be a waste of funds to stop any holes short of this goal. It is possible that a depth of 1200-1300 ft. might have to be reached in this area, depending upon where the drilling starts in the Gasconade. The State Geologist of Missouri, Mr. Edward L. Clark, has indicated in a telephone conversation that his organization will be glad to log some and probably all of the holes that the applicant might care to drill. The State Geological Survey is best qualified of all organizations to properly log these holes. It should be made a part of the contract with applicant that he will penetrate the Bonneterre dolomite and that he will have the holes logged by competent geologists to insure this. He should be informed of the State Geologist's offer. There might have to be some modification of his program to cut the number of holes, in order to keep within the costs, if the depth should prove greater than he has anticipated. However, for a preliminary estimate, 10 holes at 1100 feet each is a fair guess.

R. T. McKnight
Geologist

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202 _____

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; he should contract job to a competent churn driller

Is a field check needed on this point? No unless DMA wants to delve into such details as approving the contract driller; this might be pertinent

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

a) Is the project adequately described? Yes; 10 drill holes to depth of 1100 ft.

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

b) Is there an adequate map or sketch of the proposed work? No, but not needed on 10 random drill holes of this type. It might be stated in contract that no holes should be closer than 600 ft. apart.

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? Not applicable

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

10. (d) Ten vertical drill holes to a depth of 1100 feet at $2.00 per foot comes to $22,000, which is the amount requested by applicant.

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.
Recommended for approval as presented by applicant

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: E. T. McKnight GS

Date 7-30-51

INT.-DUP. SEC., WASH., D.C. 99009

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA

FOR USE UNDER THE

DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. dmea 1717

Date received 3-31-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1952

W. Henry Duckworth M.D.
St. Clair, Mo.

Name and address of applicant

Date _____

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*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.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

Dr. W. Henry Duckworth
St. Clair, Mo.

March 19, 1952

Form MF-100

1. None: This is a request for exploration assistance for lead and zinc.

2. Name and type of mine:
The Old Northumberland mine on this property was in operation for a number of years until about 1900 and produced about 5,000 tons of lead. This mine not now in operation.
(a) The shaft is estimated to be about 280 feet deep.
(b) The linear feet of drifts and crosscuts is unknown.
(c) Unknown
(d) None
The mine is now flooded and the shaft is caved in.

3. (a) This property is located about 1½ miles east of St. Clair, Mo. on a concrete highway.
(b) Located in the St. Clair mining district.
(c) Township 41N, 1E, section 5
(d) Franklin County Missouri.

4. (a) The property is not now in operation.
(b) The property is owned by me.

5. Not In operation.

6. My experience is business and mining has been limited to about five years operating an iron ore mine, however my associates have had extensive mining and business experience. Robert Redhage has been in the mining business in supervisory and management capacities for forty years. W. I. McKelvey has been in business management for Thirty-five years.

7. (a) The Old Northumberland mine was in production at the time lead was cheap and was discontinued because of unsatisfactory financial returns.
(b) There are eight or ten mines in this vicinity but production figures are unknown to me.
(c) Explorations are in progress in the immediate vicinity and showing promise of a lead or zinc strike.

8.

Dr. W. Henry Duckworth	Partner
Robert Redhage	Partner
W. I. McKelvey	Partner

9. Does not apply

10. Does not apply
11. Does not apply

Dr. W. Henry Duckworth
St. Clair, Mo.

12. (a) The ore taken from this property has been found in vertical veins and it is belived that exploration to greater depths than the present 280 feet has great promise.
(b) (1) None available
(2) Not known
(c) Does not apply

13. Road distance to Frisco RR at St. Clair 1½ miles over concrete highway in good repair. No expense anticipated for roads on property.

14. The water is ample. One quarter mile to Meramec river and several flowing springs on property.

15. Does not apply.

16. Does not apply.

17. None

18. No.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

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.

(Name of company)

By Ulb Henry Dreckarost
(Signature of authorized official)

(Date)

Partner
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

dmea 1717

DRILLING AGREEMENT

THIS AGREEMENT, made and entered into on this Seventeenth day of March, Nineteen Hundred Fifty-two, by and between W. I. McKelvey, 642 Yedde, Webster Groves, Missouri, hereinafter referred to as Mr. McKelvey, and Arthur Smith of St. Clair, Missouri, hereinafter referred to as the Contractor, WITNESSETH THAT:

The said Contractor, for and in consideration of the amounts hereinafter set forth, does hereby agree to drill for Mr. McKelvey one (1) hole to a depth of 600 feet.

Mr. McKelvey, herein agrees to pay the said Contractor at the rate of $2.00 per foot for drilling operations to the required depth, not to exceed 600 feet.

It is agreed that the hole will be spotted a reasonable distance from old mine shafts and diggings to avoid running into caving ground of the old diggings.

It is also understood and agreed that Mr. McKelvey shall pay the said Contractor at the rate of $1.50 per feet for all casing left in the hole. In the event, however, that 8 inch casing is necessary to shut off the top gravel, Mr. McKelvey shall pay $2.00 per foot for the 8 inch casing furnished by the said Contractor.

Payment to be made by Mr. McKelvey to the said Contractor upon completion of the aforementioned work.

IN WITNESS WHEREOF, the parties hereto have affixed their signatures to this agreement in duplicate on the day and year first above mentioned.

By _____

Arthur Smith

Arthur Smith

FILE COPY 500
SURNAME:

Moulds

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

Dr. W. Henry Duckworth
St. Clair,
Missouri

Re: Docket No. DMEA 1717

Dear Dr. Duckworth:

Under date of November 30, 1951 a letter was sent to you over the signature of C. O. Mittendorf, Acting Administrator, suggesting that you submit a modified plan of exploration for your property. A review of our files indicates that we have not received a reply to this letter.

Unless we receive your reply to this suggestion within thirty days, we will assume that you are no longer interested in exploration project assistance and consider your application closed.

Sincerely yours,

3/4/52

(MEJ)

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

DEMoulds/meh
3/4/52
cc to: Adm. R. File
Docket File Copy
Mr. Moulds
Mr. McKnight
Mr. Bishop
Region VI (2)

400

FILE COPY
SURNAME:

Moeds
Mattendorf

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

NOV 30 1951

AIR MAIL

Dr. W. Henry Duckworth
St. Clair,
Missouri

Re: Docket No. DMA-1717

Dear Dr. Duckworth:

The Government has made a field study of your project located in Section 32, T.42N., R.1E., and has also reviewed other sources of information on the southeast Missouri mineralized area. This study indicates that the following factors must be given consideration before a final decision can be made on your project.

(1) Estimates of drilling costs in this area have ranged from $4.00 to $5.00 per foot for long hole drilling such as you propose. A cost of this magnitude would result in only 4400 to 5500 feet instead of 11,000 for the $22,000 proposed.

(2) The magnetic high shown on a published magnetic map of the St. Clair quadrangle is centered in the N½ of Section 34 which is approximately 1½ miles from the center of your property in the S½ of Section 32. If 11 holes are drilled along this 1½ mile line the spacing would be 600 to 700 feet, but, if drilling costs are so high as to reduce the holes to five, the holes would have to be drilled on 1200 foot centers. This spacing would constitute a very inadequate testing of the structure and mineralization indicated by the anomaly.

(3) The long holes proposed would require very careful, experienced logging and sampling in order to determine geologic horizons, structure and mineralization. The supervisor-engineer for a project of this nature would undoubtedly require prior approval by the Government.

We are bringing this information to your attention so that you may revise your project, if you desire, before a final decision is made as to Government participation. We also suggest that you obtain a copy of the magnetic map referred to from Doctor Edward L. Clark, Missouri Geological Survey, Rolla, Missouri. Doctor Clark, we believe, will be pleased to discuss the feasibility of the project with you as he is greatly interested in geophysical work in Missouri.

Sincerely yours,

C. O. Mittendorf (fw) J.H. 11-30

Acting Administrator
Defense Minerals Exploration
Administration

DEMoulds/jem
11-27-51
cc to: Adm. Reading File
Reports & Records
Mr. Moulds
Docket
O. W. Bishop, Rm. 3423

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

Re: DMA-1717
W. Henry Duckworth, M.D.
St. Clair, Missouri
Property 2 miles east of St. Clair
Franklin County, Missouri
Exploration loan, $22,000
Lead

Memorandum

To: Reports and Records Unit
Administrative Management Div.

From: Lead-Zinc Branch

Subject: Recommendation for denial of application for exploration loan submitted by W. Henry Duckworth, St. Clair, Missouri

The application has been reviewed and reported on by the field team.

The applicant proposed an exploration project to drill 10 vertical drill holes each to a depth of about 1,100 ft. The estimated cost was $2.00 per ft. for the drilling or a total cost of $22,000.

The area which the applicant proposed to drill is underlain by the Roubidoux and Gasconade formations. The purpose of the exploration was to investigate possible mineralization in the Bonneterre dolomite which lies about 1,100 to 1,300 ft. below the surface. The area also lies on the west flank of a magnetic "high".

Investigation by the examining team reveals that the estimated cost of $2.00 per foot for drilling holes of the depth required is much too low and that a more accurate estimate would be $4.00 or $5.00 per ft. At such a unit cost the amount of money requested by the applicant would permit the drilling of only four or five holes which would not be adequate to explore the area.

Geologic and geophysical evidence also indicates that the area proposed for exploration is not too favorable. The area is located low on the flanks of a magnetic "high" which is inferred to be a reflection of an anticlinal structure. The field team suggests that exploration 1½ to 2 miles farther east would be more likely to be successful. However, the holdings of the applicant do not include, at the present, this more favorable ground.

[This memo was not transmitted]

It is also the opinion of the field team that further geophysical work would be required before a satisfactory drilling program could be formulated.

In addition, the competency of the supervisor who would be in charge of the project is questionable.

In view of the above, the field team recommends that the application be denied. The Lead-Zinc Branch concurs with this recommendation.

Returned herewith are:

1 Form MF-103
1 Review of Application for Exploration Assistance
Letter of July 19, 1951, to E. T. McKnight from Edward L. Clark.
Letter of August 1, 1951 to Edward L. Clark from E.T. McKnight.
Memorandum of September 11, 1951 to W. H. Duckworth from Tom Lyon.
Memorandum of Sept. 11, 1951 to David Gallagher from Tom Lyon.
1 Field team report with letter of transmittal
Memorandum of October 11, 1951 to Tom Lyon from C.O.Mittendorf.

G. E. Johnson, Acting Chief
Lead-Zinc Branch

Approved:

Director, Supply Division

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

Re: DMA-1717

Dr. W. Henry Duckworth

St. Clair, Missouri

Dear Dr. Duckworth:

Your application for an exploration loan has been reviewed by the field team and their report has been received.

Investigation by the field team has shown that your estimated cost of $2.00 per foot for drilling is much too low and that a cost of $4.00 or $5.00 per foot would be more accurate. At this higher unit cost per foot, the amount of money you requested would permit the drilling of only four or five holes. The possibility of finding an ore body of sufficient size on your property in the horizon you wish to explore is too remote with such a limited program to warrant Government participation. I regret, therefore, that your application must be denied.

We wish to thank you for bringing this property to our attention.

Very truly yours,

Tom Lyon, Director
Supply Division

This letter not sent.

FILE COPY
SURNAME:

350

Lyons (E TM)
McKnight
Bishop

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

Re: DMA-1717

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St. Clair, Missouri

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We wish to thank you for bringing this property to our attention.

Very truly yours,

Tom Lyon, Director
Supply Division

EJLyons:emp
G 10-26-51
Copies to: David Gallagher Region VI (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
O. M. Bishop
Directors r. files 4214 GSA
Br. r. Files 4214 GSA
Administrators r. files
DMA docket files

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

400

October 11, 1951

Memorandum

To: Tom Lyon, Director, Supply Division
Attention: Gunnar Johnson
Lead-Zinc Commodity Section

From: C. O. Mittendorf, Director
Production Expansion Division

Subject: Docket No. DMA 1717X
W. Henry Duckworth, St. Clair, Missouri

On August 28, 1951 a memo on the subject project was sent to you from this office suggesting field team examination to check the feasibility of the proposed project. Your letter of September 11, 1951 referred this suggestion to Mr. David Gallagher, Executive Officer of the Joplin Office of Defense Minerals Administration.

The report of the examination under date of October 3, 1951 by Mr. Clinton C. Knox of the Joplin Office and addressed to this office is presented herewith for your consideration along with the docket.

In event that you concur with the recommendation of the Region Office, it is presumed that a formal denial will be made by your office.

Attachments-2

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

October 11, 1951

Memorandum

To: Tom Lyon, Director, Supply Division
Attention: Gunnar Johnson
Lead-Zinc Commodity Section

From: C. O. Mittendorf, Director
Production Expansion Division

Subject: Docket No. DMA 1717X
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C. O. Mittendorf

Attachments-2

FILE COPY
SURNAME:

400

Moulds
Mittendorf (for)

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

October 11, 1951

Memorandum

To: Tom Lyon, Director, Supply Division
Attention: Gunnar Johnson
Lead-Zinc Commodity Section

From: C. O. Mittendorf, Director
Production Expansion Division

Subject: Docket No. DMA 1717X
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In event that you concur with the recommendation of the Region Office, it is presumed that a formal denial will be made by your office.

C. O. Mittendorf

Attachments-2

D.Moulds/meh
cc to: Reports and Records
Messrs. Mittendorf, Olund
Mr. Moulds
Docket

not stripped in R+R.

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

OFFICIAL FILE COPY

To	Init.	Date
~~400~~ ~~300~~	A.E.C.	10-8
210		

October 3, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 8 1951

Mr. C. O. Mittendorf, Director
Production Expansion Division, DMA
Washington 25, D. C.

Subject: Field Referral -
Dr. W. Henry Duckworth
St. Clair, Missouri
Zinc-Lead Exploration, $22,000

note from Dr. noted A.H. Paul for Thyon

Dear Mr. Mittendorf:

Transmitted herewith is a memorandum report and sketch map by E. T. Perkins, Bureau of Mines Engineer assigned to make the field check requested in Mr. Tom Lyon's letter of September 11, 1951. In addition, I am taking the liberty here of unequivocally recommending a denial of the application for the following reasons:

1. A comprehensive drilling plan cannot be formulated upon the meager data that is available on the Duckworth property.

2. The applicant certainly cannot secure any driller to put the holes down to the desired depths for the costs he has estimated.

3. Dr. Duckworth is reported to have tentatively chosen the supervisor for the project, Mr. Robert Redhage, who would be incompetent. The Missouri Geological Survey, however, do the stratigraphic logging of practically all drill holes put down in this state but cannot be expected to provide a resident project stratigrapher and must depend upon the small cutting samples selected by the drillers or project supervisors and mailed to the laboratories in Rolla. Mr. Redhage is from Miami, Oklahoma and most of his experience was in small Tri-State district zinc milling operations, mostly at the old mines in the Commerce camp of the Picher field. During World War II he was superintendent of a desultry open pit mining and milling operation at the Simpson cannel coal-zinc-lead deposit east of Versailles, Missouri where I had occasion to thoroughly observe his work.

My first, and most important reason for the denial, because I do not believe a comprehensive drilling plan can be formulated, was crystallized by several interviews here in Joplin. Also the aeromagnetic

map alone does not indicate to me that a drill hole on the Dr. Duckworth property would be much more apt to find ore than the nearby St. Clair city well which log was given in Dr. Clark's letter to McKnight on July 19, 1951. Neither can the anomaly under discussion be interpreted as very similar to that identified with the new St. Joseph Lead Company ore body in the Indian Creek area.

Fortunately, Dr. Ed Clark, Missouri State Geologist, visited this office September 22, 1951. He again pointed out that a mile east of the Dr. Duckworth property would appear to be a much more favorable locality for the project. He admitted that the aeromagnetic anomalies are prone to be more or less generalized and are often shifted or reflected laterally when checked against detailed ground magnetometer survey maps in areas wherever such are available. He believes that the shallow fissure ore veinlets (none of which are definitely known to occur on the Dr. Duckworth property. See the attached map.) are, in some unknown manner, related to those large ore deposits in eastern Missouri under discussion here, usually found near the base of the Bonneterre dolomite formation.

Mr. Dan Stewart, formerly did much detailed geological mapping and magnetometer surveying for the Missouri Geological Survey. He is now geologist for the American Zinc Lead Smelting Company here in Joplin, and showed me correlative maps of the new aeromagnetics, detailed ground magnetometer surveys, electrical resistivity surveys and their past churn drill exploration programs in that region. He proved to me that aeromagnetic anomalies are too generalized to permit intelligently spotting proposed exploratory drill holes. He believes that there is no relation between the shallow fissure deposits and the large southeast Missouri lead deposits usually found near the base of the Bonneterre strata. He showed a long-section and cross-section of three adjacent detailed magnetic "highs" drawn from a large drilling project that he had planned and supervised for American Zinc about 1946 in a locality not too far removed to the south of St. Clair where no mineralization or even any porosity was found in the host sedimentaries; no water was encountered either. The St. Louis office of that company have recently drilled several holes just to the west of St. Clair, Missouri and although no data was on file here in their Joplin office, Dan Stewart stated that only bare traces of sphalerite had been found.

Louis P. Pressler, who spent a lifetime as geological engineer for St. Joseph Lead Company in the Flat River, Missouri district, and is at present geologist for the Minerva Oil and Mining Company now also located here in Joplin, states that he has examined innumerable mines on the previously-mentioned shallow narrow fissure type deposits and that the fissures, as well as the ore, "fades away" in depth upon reaching the top of the Potosi formation, and that there is absolutely no concrete basis for believing they have any relation with the large, deeper deposits in that country.

As I said, in effect, in a memorandum to the DMA Coordinating

Committee on September 25, 1951, I believe we must give geology and geophysics a fair break in the projects we recommend so that they will not be branded as a failure because we desperately need those tools now to be made as reliable as possible for use in present-day mining explorations.

Very respectfully submitted,

Clinton C. Knox

Clinton C. Knox
For L. T. McElvenny,
Acting Executive,
DMA Field Team, Region VI.

Enclosure

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

September 27, 1951

To: Clinton C. Knox, Acting for David Gallagher, Executive, DMA Field Team, Region VI.

From: E. T. Perkins, Mining Engineer, U. S. Bureau of Mines, Joplin, Missouri.

Subject: Field referral from Coordinating Committee, DMA, Washington, D. C., Docket DMA-1717X, Dr. W. H. Duckworth, St. Clair, Missouri - Lead Exploration, $22,000.

As requested, I made the investigation on the above subject field referral, leaving Joplin, Mo. on Sept. 17 and returning the night of Sept. 20, 1951 and herewith submit my memorandum report. Part of the field time was spent discussing the above subject application with Dr. E. L. Clark, Missouri State Geologist and L. T. McElvenny, Acting Executive, DMA Field Team Region VI, both in Rolla, Missouri. I then contacted Dr. Duckworth at St. Clair, Mo. and two well drillers in that locality.

From the above subject applicant's statements, he has virtually no comprehensive plan for drilling, but the proposed first hole is located. Its location is not based on any definite program, however.

The cost of churn drilling shallow water wells in this area is from $1.75 to $2.00 a foot. The drillers who were recently contacted in that locality have drilled deep holes in this region, estimate that the cost of churn drilling will be from $4.00 to $5.00 a foot, for holes ranging from the 1000 to 1350 feet in depth, which depths are estimated to be necessary to reach the granite or porphyry. Taking into consideration the necessary supervision, engineering, analyses and accounting, there is a possibility that the above estimated $22,000 might be enough money for churn drilling of only three holes on the project.

The land where the Duckworth drilling is proposed is over a mile down on the west flank of the magnetic "high". Therefore, this drilling would of necessity be confined to a relatively "low" magnetic area, which is shown on the accompanying sketch, by the contours of an anomaly, indicated by the results of the aeromagnetic survey.

In his comments on this area, Dr. E. L. Clark writes: "You will note this location is on a magnetic structure, but one which is

not as great as the one where the St. Joseph Lead Company developed the new ore property. Personally, I wish the Duckworth property was located a mile further east or higher on the flank of the known magnetic "high". "

You have suggested that an exploratory drilling program of three holes confined to this location could not be broad enough to really test the desirable area. Before any branch of the Government should recomment such a project, at least additional and more detailed surface magnetometer work should be done and carried along toward the extreme high of this anomaly. If possible, I believe the results of this work should be verified by another geophysical surveying method. Maybe a gravitymeter survey would be applicable in giving a much more detailed picture of possible deep-seated porosity upon which to formulate a drilling program. Then maybe 10 holes drilled as an east-west cross section from one on the extreme high, down the flank westward to a final hole on the Duckworth property along with the old St. Clair city well log would present a worthwhile geological picture. The holes could often also be located in the surface lead-zinc veinlets formed in the locality of the magnetic "high".

Most of this work would extend eastward over a mile beyond the limits of Dr. Duckworth's property, but he has already acquired leases on land adjoining his own, and is continuing to add other tracts of land to his holdings in this area. When he has acquired an area reaching the mile to the east, he could present a comprehensive new application.

The attached sketch shows the location of numerous shafts and open cuts from which considerable ore was mined at an early period and the location of which seems to indicate these deposits had some relation to the anomaly.

The American Zinc Company is now churn drilling to the west of St. Clair, but these holes reach to a depth of about 500 feet and stop at the bottom of the Eminence. They report some zinc mineralization but so far no ore has been discovered.

Because of the desirability of setting up a comprehensive program, and because of the limited acreage and the small amount of money set up in the original application, it should be reconsidered, amended or a new contract made to include the additional land covered by Dr. Duckworth's leases, and the amount of money increased to include the surface magnetometer and, for possibly, gravitymetric surveys. Such a program would need to be set up somewhat along the following lines:

Geophysics	$5,000
Supervision	2,000
Engineering	400
Analyses	200
Accounting	400
Contract drilling (10 holes)	67,000
Total	$75,000

Edwin T. Perkins

E. T. Perkins

FILE COPY
SURNAME:
350

McKnight
Ordway
Birch
Lyon
Mote

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

SEP 11 1951

Re: DMA-1717X

a.e.c.

Dr. W. Henry Duckworth

St. Clair, Missouri

Dear Mr. Duckworth:

Your application for a loan to explore your land east of St. Clair by deep drilling to the lead horizon lacks certain details which need to be furnished before the contract can be approved. We are, therefore, referring the application to our field office, Mr. David Gallagher, Executive Officer, 221 West 3d Street, Joplin, Missouri for this additional information. You should be interviewed shortly by someone of the field force who can then furnish us the additional information needed for this project.

Very truly yours,

SIGNED
~~ROBERT E. HOARES~~

Tom Lyon, Director
Supply Division

JF-9-11

ETMcKnight:emp
G 9-5-51
Copies to: David Gallagher Region VI
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Administrators r. file
DMA docket files

SEP 11 1951 Re: [illegible]-1/17X

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Very truly yours,

SIGNED

Tom Lyon, Director
Supply Division

B TMcKnight:emp
9-5-51
Copies to: David Gallagher Region VI
Chief, Lead-Zinc Br.
R. T. McKnight 4204 GSA
R. H. Mets
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Administrators r. file
DMA docket files

FILE COPY
SURNAME:
350

McKnight
Billingsley
Bischoff

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

SEP 11 1951

Airmail

Re: DMA 1717X
Dr. W. Henry Duckworth
St. Clair, Missouri
Exploration loan, $22,000
Lead, zinc

Mr. David Gallagher
Executive Officer, DMA Field Team
Region VI
221 West 3d Street
Joplin, Missouri

Dear Mr. Gallagher:

The subject docket has been previously transmitted to the Production Expansion Division with a favorable recommendation. The Production Expansion Division, however, questions certain points that need answers from the field. In particular they would like to have a definite drilling plan formulated and suggest that the field team investigate the ability of the applicant to secure a driller to perform the work for the amount indicated. They also think that provisions should be made in the contract for supervision of the drilling program and in logging the holes by a competent engineer.

As pointed out in the memo to the Production Expansion Division, probably the only organization competent to make a stratigraphic logging of the proposed holes is the Missouri Geological Survey, and Mr. Clark has expressed his willingness to cooperate on this logging. The other details requested by the Production Expansion Division can probably be gotten in conference between the applicant and some member of the field team. Would you please arrange to procure this information for us?

The Production Expansion Division has also mentioned checking the favorable nature of the magnetic data on this project. There is nothing that the field team can check as the magnetic information is contained in a set of magnetic maps already prepared by the Missouri Survey. Two segments of this magnetic map are enclosed and can be transmitted to the Production Expansion Division when the docket is returned from the field.

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

JF 9-11

Lowell B. Moon
for the Bureau of Mines

J Layer
for Geological Survey

Enclosures

ETMcKnight:emp
G 9-5-51

Copies to: David Gallagher Region VI
4214 GSA
Chief, Lead-Zinc Br.
Directors r file
E. T. McKnight 4204 GSA
Br. r. file 4214 GSA
R. H. Mote
Administrators r. file
Reports & Records

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

400

AUG 2 8 1951

Memorandum

TO: Tom Lyon, Director, Supply Division
Attention: Mr. Gunnar Johnson
Lead-Zinc Commodity Section

FROM: C. O. Mittendorf, Director
Production Expansion Division

SUBJECT: Docket No. DMA 1717X
W. Henry Duckworth, St. Clair, Missouri

The subject application proposes drilling 10 churn drill holes totaling 11,000 feet to prospect the Bonneterre limestone for disseminated lead deposits under shallow vein type deposits previously mined in the Gasconade dolomite. Estimated cost of the program is $22,000 based on churn drilling at $2.00 per foot.

A review of the application indicates that the exploration is of a long shot nature based on ore found at Indian Creek approximately 20 miles from the subject area and discovered by wildcat drilling done by St. Joseph Lead Company on magnetometer data. The area to be drilled by the applicant presents similar magnetic highs and ore in the Gasconade dolomite.

It is the opinion of this office that the project merits consideration as an exploration of an area exhibiting favorable data and in event of commercial discovery a large potential production from the disseminated type of deposit.

It is believed, however, that prior to execution of a contract that the project be given field consideration to check the favorable nature of the magnetic data, formulate a drilling plan, investigate the ability of the applicant to secure a driller to perform the work for the amount indicated and provide for supervision and logging of the holes by competent engineer.

The subject docket is herewith transmitted to you for consideration as outlined above.

Attachment

AUG 29 1951 S

FILE COPY
SURNAME:

Mouldes 100
Mittendorf

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

AUG 2 8 1951

Memorandum

TO: Tom Lyon, Director, Supply Division
Attention: Mr. Gunnar Johnson
Lead-Zinc Commodity Section

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Production Expansion Division

SUBJECT: Docket No. DMA 1717X
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The subject docket is herewith transmitted to you for consideration as outlined above.

C. O. Mittendorf (J. H.)

Attachment

DEMoulds/bjs 8/28/51
cc to: ~~Adm. Reading File~~ Mr. Moulds
Reports and Records Docket
Mr. Mittendorf, Mr. Olund

G.E.C.

vid Gallagher

AUG 6 1951

August 1, 1951

Mr. Edward L. Clark
State Geologist
Missouri Geological Survey
and Water Resources
Rolla, Missouri

Dear Ed:

Many thanks for your letter of July 19 confirming and elaborating on the information that you gave me over the telephone. I am also grateful for the copies of the magnetic map, covering two interesting sheets.

I have delayed answering your letter until I could work up a recommendation on the Dr. Duckworth proposal so that I could send you a copy of the particular blurb I have used to justify approval of the proposal. A copy is enclosed.

I hope that this proposition won't cause you a lot of extra work, but I imagine that the information you will get will compensate for the extra work you may have to do.

With many thanks for your interest and cooperation in this project.

Sincerely yours,

Edwin T. McKnight
Geologist

Enclosure

4. (a) Applicant proposes to drill 10 holes to a depth of about 1100 feet to test the horizon at which "mining engineers" predict that a very satisfactory mineral strike should be made. Although he has presented the geologic basis only as a matter of hearsay, his plan is the correct one for worthwhile prospecting in this area.

Study of the published geologic map of Missouri shows that the outcropping formation on this tract is probably the Gasconade dolomite. This formation has widespread but narrow lead veins which were important in the early history of lead mining in Missouri but which have been of little importance in the last 50 years because of being too expensive to mine. Some of these deposits are on the applicant's land. On the other hand, the formation containing the disseminated lead deposits from which the large production of southeastern Missouri has come in the last 80 years is the Bonneterre dolomite which lies several hundred feet below the Gasconade.

The St. Joseph Lead Company in the last 10 years has done wild-cat drilling west and north of the producing field to see if a new deposit could be discovered at depth in the Bonneterro. Particularly favorable localities would be areas containing lead veins in the higher formations, the assumption being that with lead-bearing solutions coming up from the earth's depths, any lead in higher formations would be indicative of a possible disseminated deposit in the underlying Bonneterro. By this prospecting method, the Inidan Creek deposit was discovered, which represents the most important really new lead discovery in the last decade. A shaft is at present being sunk to a depth of about 1000 ft. A 1000 ton mill is being constructed, and in all $5,000,000 is being invested in the project with the first production expected 2 years hence.

This Indian Creek deposit is about 20 miles south of applicant's land. Its discovery has stimulated similar exploration by other large companies in his area, as mentioned by applicant. The Indian Creek deposit is on the flank of a magnetic high as shown on the magnetic map of Missouri prepared by the Missouri Division of Geological Survey and Water Resources. A different but similarly shaped magnetic high occurs in the area of the applicant's holdings and his proposed drill holes will test a position on this magnetic structure somewhat lower on the flank than that occupied by the St. Joseph-Indian Creek deposit. Significance of these magnetic structures is not known for sure, the structural conditions surrounding such hills have long been recognized as favorable prospecting ground in the Missouri lead area.

The chance of finding ore by 10 drill holes on the applicant's land is a longer shot gamble than for many other projects recommended to the Production Expansion Division, but the stakes are big. It is a worthwhile venture under DMA's exploration program.

4. (a) (Contd)

The applicant should have geologic guidance to tell when he has penetrated the Bonneterre dolomite, for it would be a waste of funds to stop any holes short of this goal. It is possible that a depth of 1200-1300 ft. might have to be reached in this area, depending upon where the drilling starts in the Gasconade. The State Geologist of Missouri, Mr. Edward L. Clark, has indicated in a telephone conversation that his organization will be glad to log some and probably all of the holes that the applicant might care to drill. The State Geological Survey is best qualified of all organizations to properly log these holes. It should be make a part of the contract with applicant that he will penetrate the Bonneterre dolomite and that he will have the holes logged by competent geologists to insure this. He should be informed of the State Geologist's offer. There might have to be some modification of his program to cut the number of holes, in order to keep within the costs, if the depth should prove greater than he has anticipated. However, for a preliminary estimate, 10 holes at 1100 feet each is a fair guess.

E. T. McKnight
Geologist

State of Missouri

Division of

GEOLOGICAL SURVEY AND WATER RESOURCES

July 19, 1951

Mr. E. T. McKnight
U. S. Geological Survey
Washington 25, D. C.

Dear Ed:

After receiving your telephone conversation yesterday, I checked the records in the vicinity of St. Clair, Missouri, and find that I was correct in stating that in this vicinity there has been no exploration for lead mineralization in the Bonneterre formation. The only drill hole in the vicinity that has penetrated the Bonneterre is the city of St. Clair well, which encountered the following:

	Depth
Roubidoux formation	0-45'
Gasconade	45-340'
Eminence	340-595'
Potosi	595-675'
Derby-Doerun	675-830
Davis	830-1025'
Bonneterre	1025-1355'
Lamotte	1355-1540' T.D.

We have never yet developed a commercial ore body where the Bonneterre was limestone. It appears that the Bonneterre had to undergo dolomization before it became susceptible to sulfide replacement. The Bonneterre in the city of St. Clair well was entirely dolomite.

I am enclosing one copy of the Richwoods quadrangle and part of the St. Clair quadrangle airborne magnetic maps. On the Richwoods quadrangle, I have indicated the general location of the new ore body discovered by the St. Joseph Lead Company. This will show you the relation of the structure to the magnetic anomaly. On the St. Clair quadrangle, I have indicated the approximate location of the property Dr. Duckworth desired to drill. You will note this location is on a magnetic structure, but one which is not as

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great as the one where St. Joseph Lead Company developed its new property. Personally, I wish the Duckworth property was located a mile further east or higher on the flank of the known magnetic high. On the other hand, many of our igneous rocks are only slightly magnetic, and the property under consideration could have as much structural relief as that found by the St. Joseph Lead Company. This is one of the reasons why our magnetic maps are not as satisfactory as we one time thought. We do have an interference oa an anticlinal structure in essentially the same position as the development of the magnetic anomaly east of St. Clair.

It is interesting to note that thus far all of the mines discovered in southeast Missouri disseminated lead belt have been found beneath shallow lead diggings. This is true from the Broch property of St. Joseph Lead, where the recent discovery was made.

In view of the lack of information at depth in the St. Clair area, it is not possible to be specific about the possibilities for or against lead mineralization in the Bonneterre. I personally consider the area to be very permissive for exploration in the Bonneterre formation.

The day is rapidly approaching when all such permissive areas will be searched for additional mineral reserves.

With personal regards and best wishes and trusting that you will call on us anytime in the future when we can be of servide to you in your program.

Very truly yours,

/s/

Edward L. Clark
State Geologist

ELC:dc

Enclosure

Mr. Moulday, Prod Eng. Div

Call Orm Bishop, USBM

X 2742

if you have questions

Re: Docket No. DMA-1717

Dr. W. Henry Duckworth
St. Clair
Missouri

Dear Dr. Duckworth:

The information obtained by the Defense Minerals Administration field team and a study of the magnetic anomaly to the east of your land holdings in section 32, T. 42N., R. I. E., have given additional factors which must be considered in reviewing your application. We thought it best to call these to your attention so that you could change your application if you choose before we make a final decision on it. Among these factors are:

(1) Some estimates of drilling costs in your area range from $4.00 to $5.00 a foot. If the drilling you propose costs that much the $22,000 will buy less than half of the holes proposed.

(2) The magnetic high shown on a published magnetic map of the St Clair quadrangle is centered in the W ½ of section 34 which is approximately 1½ miles from the center of your property in the S ½ of section 32. If 11 holes are drilled along this 1½-mile line they must be spaced at an average of 600 to 700 feet apart, but if drilling costs are so great as to reduce the number of holes to 5 then the holes would have to average 1,200 feet or more apart and would constitute a very inadequate test of that part of the structure indicated by the anomaly. If you would like a copy of the magnetic map referred to above you may obtain it from Dr. Edward L. Clark, Missouri Geological Survey, Rolla, Missouri.

(3) Holes of the nature proposed must be logged carefully in order to determine geologic horizons and structures.

Such logging must be based on careful sampling and that in turn calls for a responsible, informed sampler.

We would be pleased to hear from you on the subject of these factors as they relate to your proposed exploration.

FILE COPY
SURNAME:

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

Brought to (ETM) Herres Note Lazon Strobel 6/25

June 25, 1951

DMA 17177

Hon. Clarence Cannon
House of Representatives
Washington 25, D. C.

My dear Mr. Cannon:

In accordance with your request of June 20, 1951, I shall be pleased to keep you informed as to the status of the application filed by Dr. W. Henry Duckworth of Saint Clair, Missouri, for Government assistance in the form of a loan for exploration purposes.

Dr. Duckworth's application was received by Defense Minerals Administration on June 20, 1951, and now is under consideration by the Lead-Zinc Branch.

In case I can be of further assistance to you at any time, please feel free to call on me.

Sincerely yours,

JAMES BOYD

Administrator

OHerres'lm

cc: Administrator
Strobel
Mote
McKnight
Herres
Files

Dmc 17177

FILE COPY
SURNAME:

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

June 21, 1951

Mr. W. Henry Duckworth, M. D.
St. Clair, Missouri

Subject: DMA-1717X
Re: Exploration loan

My dear Mr. Duckworth:

Receipt is acknowledged of your application and attachments of May 30, 1951 for and exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1717X and was referred to Mr. Otto Herres, Chief, Lead-Zinc Branch on June 20, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1717X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel jeb
Executive Secretary

LFSTROBEL:Jeb
cc: Strobel-2
Files
Herres
Lyon

COPY COPY

House of Representatives
Committee on Appropriations
Washington, D. C.
June 20, 1951

Mr. Landon F. Strobel
Executive Secretary
Defense Minerals Administration
Interior Department
Washington, D. C.

Dear Mr. Strobel:

Dr. W. Henry Duckworth of Saint Clair, Missouri, has filed application for a Defense Minerals loan, and I shall appreciate it if you will keep me informed as to status of the application.

With best wishes,

Very truly yours,

Clarence Cannon

CC/e/lm

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~~LANDON F. STROBEL~~

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GEORGE B. SCHWABE, OKLA.

GEORGE Y. HARVEY, CLERK

House of Representatives
Committee on Appropriations
Eighty-second Congress
Washington, D. C.

June 20, 1951

ans. 6/25/51
O Henry/lm

Dma - 1717 X

Mr. Landon F. Strobel
Executive Secretary
Defense Minerals Administration
Interior Department
Washington, D.C.

Dear Mr. Strobel:

Dr. W. Henry Duckworth of Saint Clair, Missouri, has filed application for a Defense Minerals loan, and I shall appreciate it if you will keep me informed as to status of the application.

With best wishes,

Very truly yours,

Clarence Cannon

CC/e

JUN 25 1951

House of Representatives
Committee on Appropriations
Eighty-second Congress
Washington, D. C.

June 20, 1951

6/22/51
Reply - Boyd

Mr. Landon F. Strobel
Executive Secretary
Defense Minerals Administration
Interior Department
Washington, D.C.

Dear Mr. Strobel:

Mr. W. Henry Duckworth of Saint Clair, Missouri, has filed application for a Defense Minerals loan, and I shall appreciate it if you will keep me informed as to status of the application.

With best wishes,

Very truly yours,

CC/e

June 21, 1951

Mr. W. Henry Duckworth, M. D.
Mt. Olair, Missouri

Subject: DMA-1717X
Re: Exploration loan

My dear Mr. Duckworth:

Receipt is acknowledged of your application and attachments of May 30, 1951 for and exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1717X and was referred to Mr. Otto Herres, Chief, Lead-Zinc Branch on June 20, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1717X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:Jeb
cc: Strobel-2
Files
Herres
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1717 X

Date received 6/19/51

Participation

W. Henry Duckworth M.D.
St. Clair,
Missouri.

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $ 22,000.00

Mineral or metal Lead and zinc

Percentage of Government participation 50%

Location of mine St. Clair, Mo.

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.

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. None
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. Does not apply
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)? Sufficient to my part of cost.

*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? Lead and zinc.

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.) and wages of each. None
    (*b*) Supervisors, by numbers and positions, with salaries of each. None
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings. None
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. None
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. See attaced paper
    (*f*) Cost of rental for equipment which the operator proposes to rent. None
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work. None
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each. None
    (*i*) Cost of power, water, utilities, and any other items not provided for above. See attached paper.

24. Furnish a time schedule of the project, stated in terms of months, proposed, 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.

(Name of company)	By W. Henry Chambers (Signature of authorized official)
(Date)	President. (Title)

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

*Same as footnote on page 1.

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

Dr. W. Henry Duckworth,
St. Clair, Mo.

Form MP-103

10. (a) Description of property:
80 acres W2SE sect. 32 Twnshp 42 R1E
160 acres SW sect. 32 Twnshp 42 R1E
80 acres N2 NE sect. 6 Twnshp 41 R1E
(b) Same as above

22. (B) Lead and zinc ore has been mined on this property from vertical fissure veins ranging from 2 inches to 2 feet in width at varying depths up to 280 feet.

Extensive exploration several miles west has revealed the same type vein and formation containing lead and zinc ore.

Mining engineers who have examined the findings and studied the vein formations are now of the opinion that a very satisfactory strike should be made at depths up to 1100 feet.

They base their opinoin on the type of vein formation saying that the pressure required to force the ore into the fissures indicate a satisfactory deposit at greater depths.

Many mines in this area have been operated successfully at shallow levels and have made it possible for a more intelligent study of the present possibilities.

Two of the largest operators of lead and zinc mines are now conducting extensive exploration here.

I do not have maps such as requested.

23. (f) A driller and rig can be hired at a cost of two dollars a foot to sink test holes. It is estimated that not more than 10 test holes would be needed.

24. Work would begin within thirty days of approval of this application and should progress at the rate of about 100 feet a day at a cost of about two hundred dollars ($200) a day.

The entire project would be accomplished, allowing for possible mechanical failures and other interruptions, in eight months at a total expenditure of twenty two thousand dollars ($22,000.00).

W. Henry Duckworth.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1717 X

Date received 6/19/51

Participation

Department of the Interior
Defense Minerals Administration
RECEIVED
JUN 19 1951
LAMBOR F. STROBEL,
Executive Secretary

W. Henry Duckworth M.D.
St. Clair,
Missouri.

Name and address of applicant

May 30, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $ 22,000.00

Mineral or metal Lead and zinc

Percentage of Government participation 50%

Location of mine St. Clair, Mo.

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.

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. None
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. Does not apply
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)? Sufficient to my part of cost.

*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? Lead and zinc.
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. None
    (*b*) Supervisors, by numbers and positions, with salaries of each. None
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings. None
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. None
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. None
    (*f*) Cost of rental for equipment which the operator proposes to rent. See attaced paper
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work. None
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each. None
    (*i*) Cost of power, water, utilities, and any other items not provided for above. None
24. Furnish a time schedule of the project, stated in terms of months after the project is approved, showing progress expected to be accomplished and the money expected to be spent. See attached paper.

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.

(Name of company)	By W. Henry Dunbar (Signature of authorized official)
(Date)	Partner. (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

Dr. W. Henry Duckworth,
St. Clair, Mo.

Form MF-103

10. (a) Description of property:
80 acres W2SE sect. 32 Twnshp 42 RIE
160 acres SW sect. 32 Twnshp 42 RIE
80 acres W2 NE sect. 5 Twnshp 41 RIE
(b) Same as above

22. (B) Lead and zinc ore has been mined on this property from vertical fissure veins ranging from 2 inches to 2 feet in width at varying depths up to 280 feet.

Extensive exploration several miles west has revealed the same type vein and formation containing lead and zinc ore.

Mining engineers who have examined the findings and studied the vein formations are now of the opinion that a very satisfactory strike should be made at depths up to 1100 feet.

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The entire project would be accomplished, allowing for possible mechanical failures and other interruptions, in eight months at a total expenditure of twenty two thousand dollars ($22,000.00).

W. Henry Duckworth

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. Dma-1717 X

Date received 6/19/51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 19 1951
LANDON F. STROBEL
Executive Secretary

W. Henry Duckworth M.D.
St. Clair,
Missouri.

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $ 22,000.00

Mineral or metal Lead and zinc

Percentage of Government participation 50%

Location of mine St. Clair, Mo.

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

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*1. Is applicant an individual, partnership, or corporation?
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*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. None
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16—64067-1

THE PROPERTY

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*11. State the present and former names of the property, if any. None

*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.

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15. State in detail how the ore could be shipped and how and where milled.

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(*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? Lead and zinc.

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. None

(*b*) Supervisors, by numbers and positions, with salaries of each. None

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

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

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. None

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

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

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each. None

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

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. See attached paper.

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.

(Name of company)

By W. Henry Rennert
(Signature of authorized official)

(Date)

President
(Title)

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

*Same as footnote on page 1.

Dr. W. Henry Duckworth,
St. Clair, Mo.

Form MP-103

10. (a) Description of property:
80 acres W2SE sect. 32 Twnshp 42 RIE
160 acres SW sect. 32 Twnshp 42 RIE
80 acres W2 NE sect. 5 Twnshp 41 RIE

(b) Same as above

22. (B) Lead and zinc ore has been mined on this property from vertical fissure veins ranging from 2 inches to 2 feet in width at varying depths up to 280 feet.

Extensive exploration several miles west has revealed the same type vein and formation containing lead and zinc ore.

Mining engineers who have examined the findings and studied the vein formations are now of the opinion that a very satisfactory strike should be made at depths up to 1100 feet.

They base their opinoin on the type of vein formation saying that the pressure required to force the ore into the fissures indicate a satisfactory deposit at greater depths.

Many mines in this area have been operated successfully at shallow levels and have made it possible for a more intelligent study of the present possibilities.

Two of the largest operators of lead and zinc mines are now conducting extensive exploration here.

I do not have maps such as requested.

23. (f) A driller and rig can be hired at a cost of two dollars a foot to sink test holes. It is estimated that not more than 10 test holes would be needed.

24. Work would begin within thirty days of approval of this application and should progress at the rate of about 100 feet a day at a cost of about two hundred dollars ($200) a day.

The entire project would be accomplished, allowing for possible mechanical failures and other interruptions, in eight months at a total expenditure of twenty two thousand dollars ($22,000.00).

W. Henry Duckworth.

68

McKnight
OILEAY
GEOL. MO. 7-2
6/5/51
Billings

Defense Minerals Administration

Review of Application for Exploration Assistance

To: Production Expansion Division

From: Director, Supply Division

Docket No. 1717X

Commodity Lead, zinc

Total Amount $22,000

Govt. Participation 50% ($11,000)

1. Name and Address of Applicant W. Henry Duckworth, M.D., St. Clair, Missouri

2. Location of Property 2 miles east of St. Clair, Franklin County, Missouri SW 1/4 and W 1/2 SE 1/4 sec. 32, T. 42 N, R 1 E; and W 1/2 NE 1/4 sec. 5, T. 41 N., R 1 E.

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 See attached comment

b) Poor

c) None

d) Don't know—needs field examination

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

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

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

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

*question numbers are those of MF-103

4. (a) Applicant proposes to drill 10 holes to a depth of about 1100 feet to test the horizon at which "mining engineers" predict that a very satisfactory mineral strike should be made. Although he has presented the geologic basis only as a matter of hearsay, his plan is the correct one for worthwhile prospecting in this area.

Study of the published geologic map of Missouri shows that the outcropping formation on this tract is probably the Gasconade dolomite. This formation has widespread but narrow lead veins which were important in the early history of lead mining in Missouri but which have been of little importance in the last 50 years because of being too expensive to mine. Some of these deposits are on the applicant's land. On the other hand, the formation containing the disseminated lead deposits from which the large production of southeastern Missouri has come in the last 80 years is the Bonneterre dolomite which lies several hundred feet below the Gasconade.

The St. Joseph Lead Company in the last 10 years has done wildcat drilling west and north of the producing field to see if a new deposit could be discovered at depth in the Bonneterro. Particularly favorable localities would be areas containing lead veins in the higher formations, the assumption being that with lead-bearing solutions coming up from the earth's depths, any lead in higher formations would be indicative of a possible disseminated deposit in the underlying Bonneterre. By this prospecting method, the Indian Creek deposit was discovered, which represents the most important really new lead discovery in the last decade. A shaft is at present being sunk to a depth of about 1000 ft. A 1000 ton mill is being constructed, and in all $5,000,000 is being invested in the project with the first production expected 2 years hence.

This Indian Creek deposit is about 20 miles south of applicant's land. Its discovery has stimulated similar exploration by other large companies in his area, as mentioned by applicant. The Indian Creek deposit is on the flank of a magnetic high as shown on the magnetic map of Missouri prepared by the Missouri Division of Geological Survey and Water Resources. A different but similarly shaped magnetic high occurs in the area of the applicant's holdings and his proposed drill holes will test a position on this magnetic structure somewhat lower on the flank than that occupied by the St. Joseph-Indian Creek deposit. Significance of these magnetic structures is not known for sure, but if they represent buried pre-Cambrian hills, as seems likely, the structural conditions surrounding such hills have long been recognized as favorable prospecting ground in the Missouri lead area.

The chance of finding ore by 10 drill holes on the applicant's land is a longer shot gamble than for many other projects recommended to the Production Expansion Division, but the stakes are big. It is a worthwhile venture under DMA's exploration program

The applicant should have geologic guidance to tell when he has penetrated the Bonneterre dolomite, for it would be a waste of funds to stop any holes short of this goal. It is possible that a depth of 1200-1300 ft. might have to be reached in this area, depending upon where the drilling starts in the Gasconade. The State Geologist of Missouri, Mr. Edward L. Clark, has indicated in a telephone conversation that his organization will be glad to log some and probably all of the holes that the applicant might care to drill. The State Geological Survey is best qualified of all organizations to properly log these holes. It should be made a part of the contract with applicant that he will penetrate the Bonneterre dolomite and that he will have the holes logged by competent geologists to insure this. He should be informed of the State Geologist's offer. There might have to be some modification of his program to cut the number of holes, in order to keep within the costs, if the depth should prove greater than he has anticipated. However, for a preliminary estimate, 10 holes at 1100 feet each is a fair guess.

E. T. McKnight

E. T. McKnight
Geologist

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202 _____

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; he should contract job to a competent churn driller

Is a field check needed on this point? No unless DMA wants to delve into such details as approving the contract driller; this might be pertinent

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

a) Is the project adequately described? Yes; 10 drill holes to depth of 1100 ft.

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

b) Is there an adequate map or sketch of the proposed work? No, but not needed on 10 random drill holes of this type. It might be stated in contract that no holes should be closer than 600 ft. apart.

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? Not applicable

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

10. (d) Ten vertical drill holes to a depth of 1100 feet at $2.00 per foot comes to $22,000, which is the amount requested by applicant.

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.
Recommended for approval as presented by applicant

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: E. T. McKnight GS

Date 7-30-51

approved
Tom Lyon

INT.-DUP. SEC., WASH., D.C. 99009

Form MF-13
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. dma-1717 X

Date received 6/19/51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 19 1951
LANDON F. STECKER
Executive Secretary

W. Henry Duckworth M.D.
St. Clair,
Missouri.

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $ 22,000.00

Mineral or metal Lead and zinc

Percentage of Government participation 50%

Location of mine St. Clair, Mo.

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.

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. None
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. Does not apply
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)? Sufficient to my part of cost.

*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.
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(Name of company)	By W. Henry Klingert (Signature of authorized official)
(Date)	Partner. (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

Dr. W. Henry Duckworth,
St. Clair, Mo.

Form MF-103

10. (a) Description of property:
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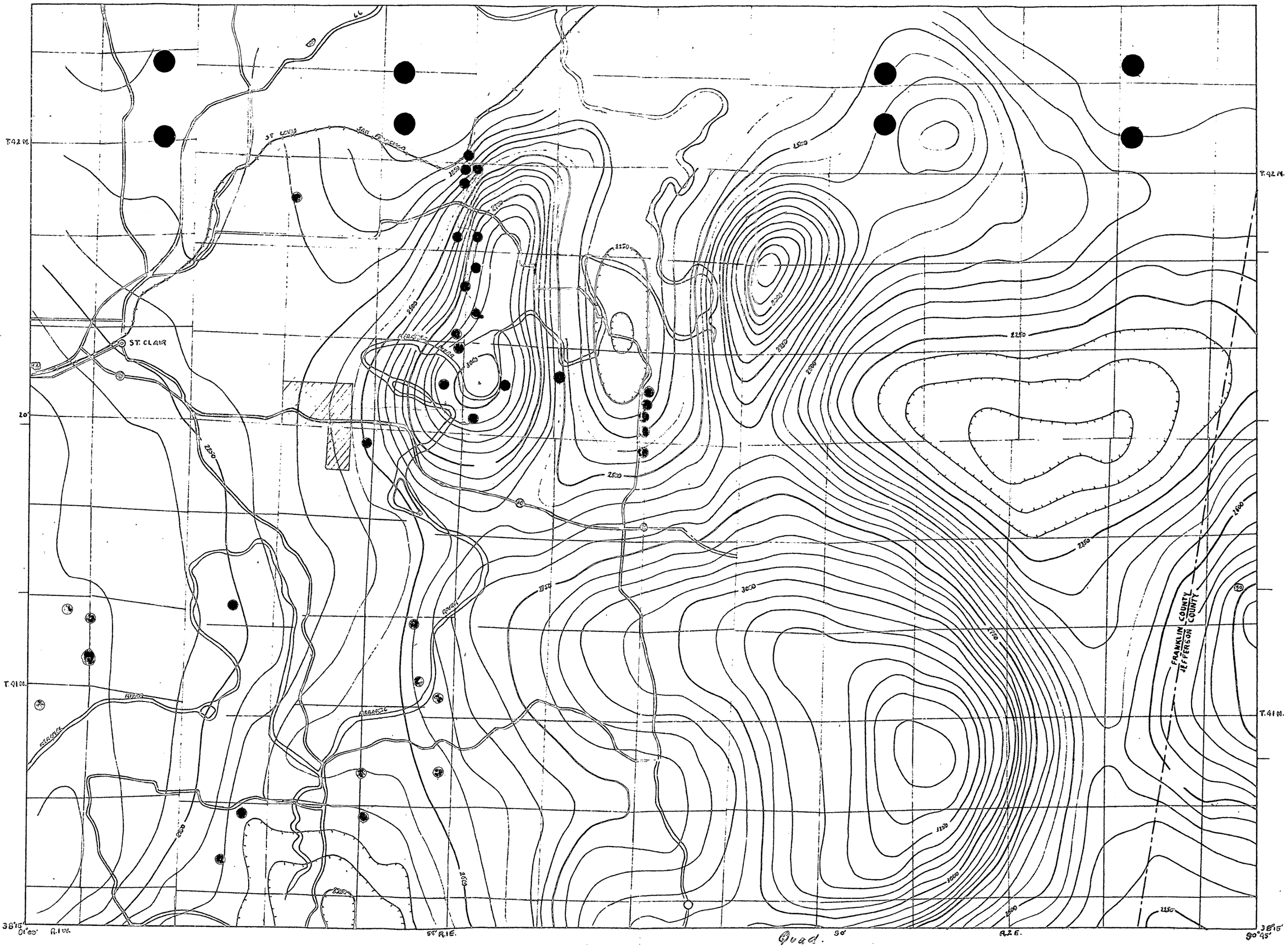
W. Henry Duckworth.



AEROMAGNETIC MAP of part of ST. CLAIR ~~CO.~~ Quad., MO.

○ Abandoned workings ▨ Duckworth land