DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 2697

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Routing Slip
Copies to USGS, USBM, Reg. V

To:	Code 700, Rm. 4640	Date	9-16-52
To:	Open Comm	Date	2-25-53
To:	Open Comm	Date	6-15-53
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FILE COPY
SURNAME:

Docket
Ellis
Hedges
Gamble
Gebridge
Johnson

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

JUN 15 1953

BH

Messrs. [illegible]
[illegible] Development Co.,
[illegible] East [illegible] Street
Owosso, Michigan

Re: Docket No. [illegible]-219 (Quantum)
[illegible]
Dickinson County, Michigan

Gentlemen:

[illegible] is made to your application for government [illegible] proposed exploration project estimated to cost $[illegible]. We also acknowledge receipt of your letter dated June [illegible], 1953, and have carefully noted its contents.

[illegible] projects [illegible] exploration [illegible] administration [illegible], in its judgment, show definite promise of yielding material of acceptable grade and in quantities that will significantly improve the mineral supply position for a [illegible] defense program.

[illegible] study of [illegible] data available to this [illegible] and examination of the property concerned [illegible] the possibility of isolated minable ore reserves by your proposed exploration program is not believed to be sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

If future work at your property [illegible] evidence which could materially alter this opinion, please be assured we will be glad to consider a new application.

Sincerely yours,

C. O. Mittendorf (for) J.H.
6-15-53

Administrator

EWEllis/db
6-11-53
cc to: Adm. Reading File
Operating Committee
Docket

Messrs: H.D.Keiser, Rm.3641
A. [illegible] Bulter, Jr., Rm-3206, OSA
Ellis

June 12, 1953

SUMMARY OF PROPOSED PROJECT

Docket No. DMEA-2697

Applicant: James E. Leitch & Thad. D. Isham
L & I Uranium Development Co.

Subject: Denial of application

Commodity: Uranium

Location of property: Dickinson County, Michigan

Amount of Application: $48,541.50
Date of Application: Sept. 10, 1952

Outline of project: Proposal is vague. However, Applicant apparently wants to deepen a presently existing trench in a schist formation, by about 80 feet.

Field Team Report: "Only a few hundred pounds of material in the open cut gave scintillometer readings that indicated a radioactive content of greater than 0.01 percent equivalent uranium." "Radioactive concentration is very limited in horizontal and vertical extent."

Recommendation: Denial

Commodity Members' Comments:

Bureau of Mines: Mr. H. D. Keiser, June 9, 1953
Discussed with U. S. G. S. & A. E. C. representatives.
Concurs in F. T. report & recommends denial.

Geological Survey: Mr. Arthur P. Butler, Jr. June 11, 1953
Several samples only ran 0.002 to 0.008 percent uranium.
No uranium minerals identified. Small radioactivity confined to a layer of biotite schist in granite. Recommends denial.

Rare & Misc. Metals
Division, Engineer:

Comments: Possibilities of a significant discovery extremely limited.
Accordingly recommends denial.

James T. Mc Ellis

June 12, 1953

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Recommendation: Denial

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Concurs in F. T. report & recommends denial.

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Rare & Misc. Metals
Division, Engineer:

Comments: Possibilities of a significant discovery extremely limited. Accordingly recommends denial.

EHB

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member
Uranium Commodity Committee

DATE: June 11, 1953

FROM : Arthur P. Butler, Jr., USGS Member,
Uranium Commodity Committee

SUBJECT: Final Field Team Report DMEA Docket 2697 (uranium) L & I Uranium Development Co., (James E. Leitch and Thos. D. Isham) applicant, Owosso, Mech. L & I No. 21 claim Sec. 13, T. 42 N., R. 29 W. Dickinson Co., Mich.

I have reviewed the Field Team report concerning the property identified in the subject above and discussed it with H. D. Keiser, Bureau of Mines member, Uranium Commodity Committee.

Radioactivity on this property is confined mainly to a layer of biotite schist enclosed in granite. Several samples collected by various investigators contain from 0.009 to 0.03 percent equivalent uranium, 0.002 to 0.008 percent uranium, possibly 0.03 percent in one sample. No uranium minerals were identified by the Field Team examiners. Their data agree substantially with previously available information and indicate that exploration is very unlikely to result in discovery of commercial concentrations of uranium.

Recommendation

I concur with the Field Team's recommendation that Government assistance for exploration be denied.

Arthur P. Butler, Jr.

Copy to: E. Wm. Ellis (2)

IN REPLY REFER TO:

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

E. Wm. Ellis, DMEA Member
Uranium Commodity Committee
Arthur P. Butler, Jr., USGS Member,
Uranium Commodity Committee

June 11, 1953

Final Field Team Report DMEA Docket 2697 (uranium) L & I Uranium Development Co., (James E. Leitch and Thos. D. Isham) applicant, Owosso, Mech. L & I No. 21 claim Sec. 13, T. 42 N., R. 29 W. Dickinson Co., Mich.

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Recommendation

I concur with the Field Team's recommendation that Government assistance for exploration be denied.

Copy to: E. Wm. Ellis (2)

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

June 9, 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

Defense Minerals Administration
RECEIVED
JUN 11 1953

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Field Team Report, DMEA Docket 2697, James E. Leitch and Thad D. Isham, 1418 E. Main St., Owosso, Michigan.

I have reviewed the subject report and discussed it with Arthur P. Butler, Geological Survey Member, and Joseph O. Hosted, representative of the Atomic Energy Commission.

It is recommended that the report be approved, and that the application for an exploration loan be denied.

The subject report has been forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto.

H. D. Keiser

H. D. Keiser

6/9/53- db

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Michigan's Oldest and Largest Automobile Auction

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BY SUBSCRIPTION ONLY

OFFICE:
1450 East Main Street
Owosso, Michigan

June 2,1953

Ernest Wm.Ellis,Chief.
Rare & Misc.Metals Div.
Defense Minerals Exploration Admin.
Washington 25,D.C.

Re:Docket #DMEA 2697 Uranium

JUN 5 1953

Dear Mr. Ellis:

In regards to our telephone conversation of June 1,1953,we discussed our application with you on the needmof an early decision. We were informed that your office had not received a report from the U.S.Bureau of Mines (Mr.Needham) and would not be able to act until such time.

I called Minneapolis and got in touch with E.J.Martin(Mining Engineer) who made the survey of our deposits. His oral report was not encouraging and he informed us that the report was mailed out last week.

We mailed photostats of the reports on chemical analysis submitted by the Raw Materials Operations A.E.C. in our application. You will note that the samples contain U 308 and that some ~~of~~ the form of pitchblende and uraninite. We believe that with the aid of this grant that exploration at greater depth could expose commerical ore. This is based on a primary source as established,also,"Where the presents of uranium occurs it must be proved that more is not there".

Therefore our diligence in the search for commerical uranium should be protected by aid from the government. If small capital is to survive it must be encouraged as well as the large investors.

Thanking you for past cooperation and an early reply,

L & I Uranium Development Co.

James E. Leitch

James E.Leitch

Thad D. Isham

Thad D.Isham

6/5/53 - db.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 1 1953

May 28, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2697, L & I Uranium Development Co.

Reference is made to your letter of February 25, 1953.

Here are the original and three copies of the Field Team Report on the subject docket, which denies exploration assistance.

A. B. Needham
Executive Officer, Field Team
Region V

Attachments

JUN 1 1953

6/15/53

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS MC KAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM REPORT

L & I URANIUM DEVELOPMENT COMPANY

DMEA DOCKET 2697

E. J. Martin, Mining Engineer
U. S. Bureau of Mines

Rollin C. Vickers
U. S. Geological Survey

Geologic report on the L & I No. 2 claim

Dickinson County, Michigan

R. C. Vickers

U. S. Geological Survey

Docket: DMEA 2697

Commodity: Uranium

The L & I No. 2 claim was examined on April 7, 1953, to appraise the feasibility for a DMEA loan which was requested by the owners to explore the property for uranium. This work was done on behalf of the Division of Raw Materials, U. S. Atomic Energy Commission.

The No. 2 claim is one of three prospects which the owners, James J. Leitch and Thad D. Isham, have located for radioactive material in that area. This report is concerned only with claim No. 2 on which the owners have requested DMEA assistance.

The L & I No. 2 claim is about 4 miles northwest of Felch, Michigan (7.9 miles by road), and is in the N½NW¼ sec. 13, T. 42 N., R. 29 W., Michigan Meridian.

Road log to No. 2 claim, based on speedometer mileage:

0.0 County highway department garage in Felch, Michigan. Proceed west on Michigan Highway 69.

3.2 Junction. Turn right on road that leads to Six Mile Lake.

5.3 Fork, bear right.

5.9 Junction. Take right turn up hill and across hay fields.

7.0 Junction. Take left turn.

7.2 Fork. Keep to the right.

7.9 Open cut at claim No. 2 on the right side of the road.

The last 2 miles into the property can only be traveled with a vehicle equipped with four-wheel drive.

The prospect is situated on the west side of a granite knob, about 500 feet in diameter, that rises about 30 feet above the surrounding relatively flat area. The prospect consists of a small open-cut bench, about 35 feet long and about 15 feet high at the center, that has been cut mainly in a fractured and altered biotite schist zone in granite (fig. 1). The band of biotite schist trends northward and dips in general vertically. The schist is well exposed only in the open cut, but it may be traced for about 50 feet along the strike. The schist zone is about 5 feet wide north of the open cut and appears to widen to about 10 feet near the center of the open cut. No outcrops of the schist zone were observed north or south of the area shown in figure 1. A few veinlets of quartz with small amounts of orthoclase and pyrite cut the schist but were not confined to the areas exhibiting abnormal radioactivity.

Abnormal radioactivity, detected with a Nuclear Research Corporation Scintillometer, model SBX-5, is sporadically distributed in the schist and ranges from 0.05 to 2.0 mR/hr (background 0.03 mR/hr). Only a few hundred pounds of material in the open cut gave scintillometer readings that indicated a radioactive content of greater than 0.01 percent equivalent uranium. A sample of the most radioactive unweathered

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EXPLANATION

Granite

Outcrop — Inferred

Biotite schist

Geologic contact
Dashed where approximately located

85
Strike and dip of foliation

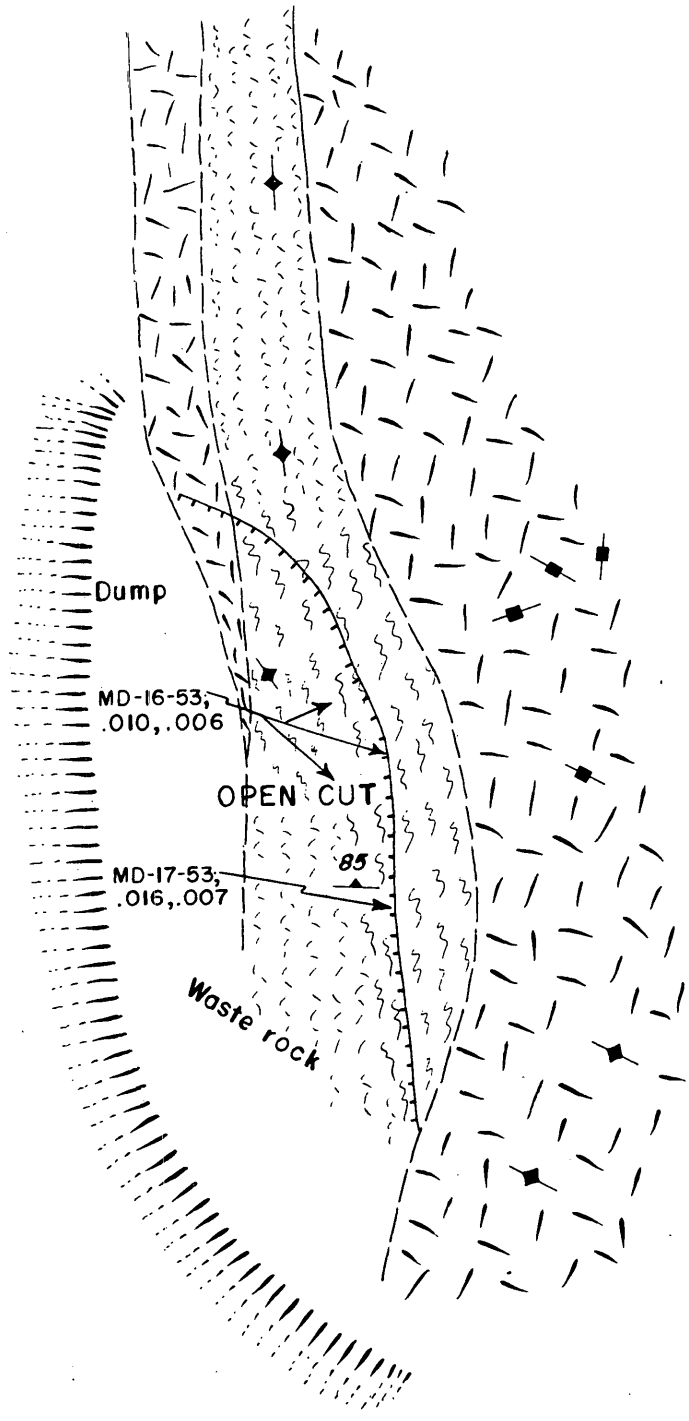
Strike of vertical foliation

Strike of vertical joints

MD-17-53;
.010, .006
Sample location
Showing sample number, percent equivalent uranium and percent uranium

0 — 10 FEET
SCALE

N



Tape and compass map by R. C. Vickers,
April, 1953

Figure 1. Geologic map of the L & I No. 2 claim, N ½, NW¼, sec. 13, T. 42 N., R. 29 W., Dickinson County, Michigan.

material contained 0.016 percent equivalent uranium and 0.007 percent uranium. A grab sample of material from the dump contained 0.010 percent equivalent uranium and 0.006 percent uranium and is representative of the average grade of the abnormally radioactive portions of the schist exposed in the open cut. The results of these analyses for equivalent uranium and uranium as well as analyses of selected samples of the most radioactive rock found by other investigators (Everhart, 1952, p. 9) are tabulated below.

Sample no.	Collector and year	eU	U	Remarks
1361-J	H. V. Lee, 1950	--	0.03	Probably incorrect assay.
1361-J	H. V. Lee, 1950	0.02	--	
--	L. P. Barrett, 1951	0.01	0.003	
--	L. P. Barrett, 1951	0.029	0.002	
4582-B	D. L. Everhart, 1952	0.009	0.002	
4582-C	D. L. Everhart, 1952	0.02	0.008	Fresh, most radioactive rock.
MD-16-53	R. C. Vickers, 1953	0.010	0.006	Grab sample, dump.
MD-17-53	R. C. Vickers, 1953	0.016	0.007	Most radioactive rock, unweathered.

The above analyses indicate that most of the radioactivity is probably due to thorium and that only small amounts of uranium are present.

Petrographic examination of the schist shows that most of the radioactivity is associated with a bleached and sericitized portion of the schist. No radioactive minerals were seen in thin sections, and it is believed that most of the radioactivity is caused by small smounts of a finely disseminated thorium-bearing mineral.

Based upon the results of the geologic investigation of this property, it is recommended that the DMEA application be denied for the following reasons:

1. Only a few hundred pounds of rock containing radioactive material of possible economic significance is present.

2. Most of the radioactivity is probably due to thorium.

3. Experience with other similar occurrences of abnormal radioactivity in the area indicates that the radioactive "concentration" is very limited in horizontal and vertical extent.

Reference

Everhart, D. L., 1952, Radioactive mineral deposits in Dickinson County, Michigan: U. S. Atomic Energy Commission RMO 984.

DMEA Docket 2697 Uranium
L & I Uranium Development Company
1418 E. Main Street
Owosso, Michigan
Dickinson County, Michigan

SUMMARY AND CONCLUSION

Claim No. 2 of L & I Uranium Development Co., located in N1/2 NW1/4 sec 13, T. 42 N., R. 29 W., about four miles northwest of Felch, Mich., was examined April 7, 1953, by a DMEA field team. A narrow band of biotite schist has been partially exposed. The exposed section averages 8 feet in width, 35 feet in length, and the highest vertical face is 15 feet. The radioactivity is very low and any tonnage that would develop would be relatively small.

The field team recommends denial of Government assistance on this project.

The Project The L & I Claim No. 2 was examined on April 7, 1953, by the DMEA field team. This claim is located in the N1/2 NW1/4 sec. 13, T. 42 N., R. 29 W., and is about four miles northwest of Felch, Mich., and about eight miles by road.

At the time of this examination the L & I Uranium Development Co., had excavated a bench about 35 feet long, 8 feet wide, and 15 feet with an over-all length of bench about 70 feet. A narrow band of schist, which is slightly radioactive, was exposed in this bench. A sample BM_2 about 7 feet wide was taken and analyzed radiometrically and gave a uranium equivalent of 0.005 percent.

The attached sketch indicates the approximate amount of excavation made since Dr. D. L. Everhart's examination and probably consists of the entire bench.

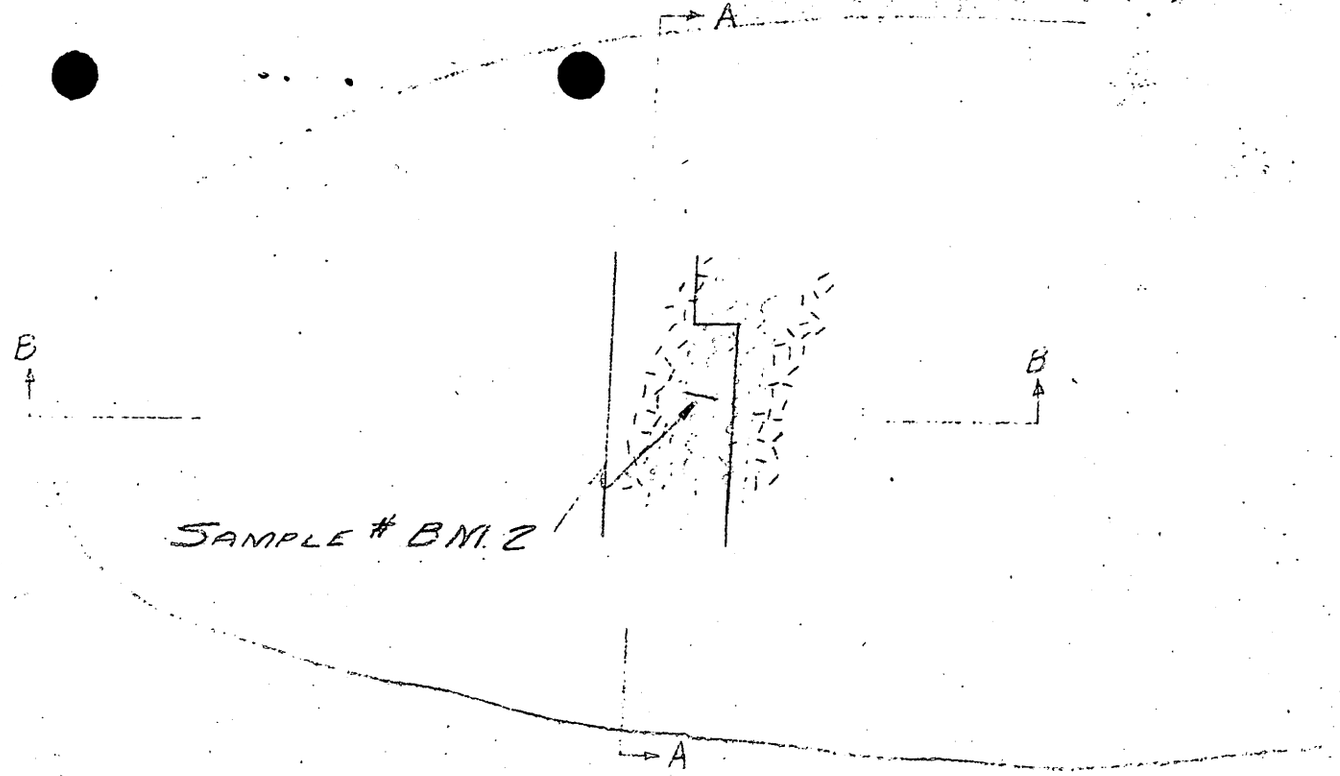
Proposed work The Operator is a little vague on his proposed work, but he is definite in his opinion that he must lower each square foot of the outcrop vertically 80 feet in order to explore the schist at depth. No amount of persuasion would change his opinion. Referring to the attached sketch, at the present time there is a bench about 70 feet long and 15 feet high. At the highest point in this bench the schist is exposed for about 35 feet with an average width of approximately 8 feet. Secs. AA and BB show roughly the excavation the Operator proposes to make. If it were desirable to further explore this outcrop, two trenchs at one-tenth the cost of the open cut would furnish nearly the same information.

Proposed costs Since the proposed exploration method is not considered sound, and because of the very low radioactivity and small tonnage of the deposit, not much consideration was given to the proposed costs except to note they are very high relative to the amount of information that would be furnished. For instance, provision is made to both bulldoze the broken rock as well as hand muck it.

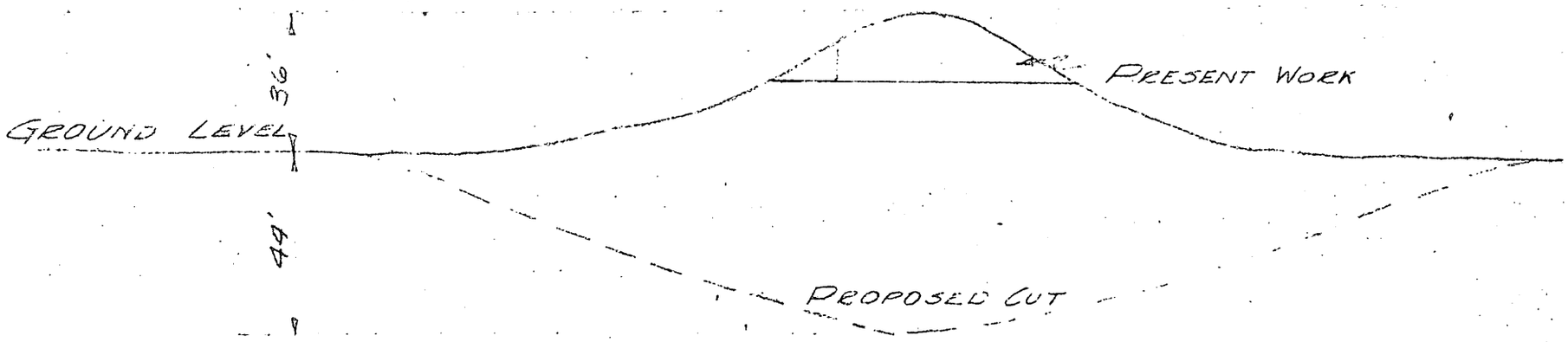
Personnel Mr. Thad D. Isham, who would be in charge of the operation, has neither the training, nor the experience that would fit him for such a job. He allegedly has some three years' experience prospecting for uranium, otherwise he has been associated with the automobile business. Mr. Isham does not give any evidence of having received any sound technical advice; if he has received it, he has failed to absorb it.

Mr. James E. Leitch, the other member of the partnership is financially capable of furnishing the company's share of money, but he has no mining background.

Equipment and Buildings There are no buildings or equipment on the property.



PLAN OF OUTCROP

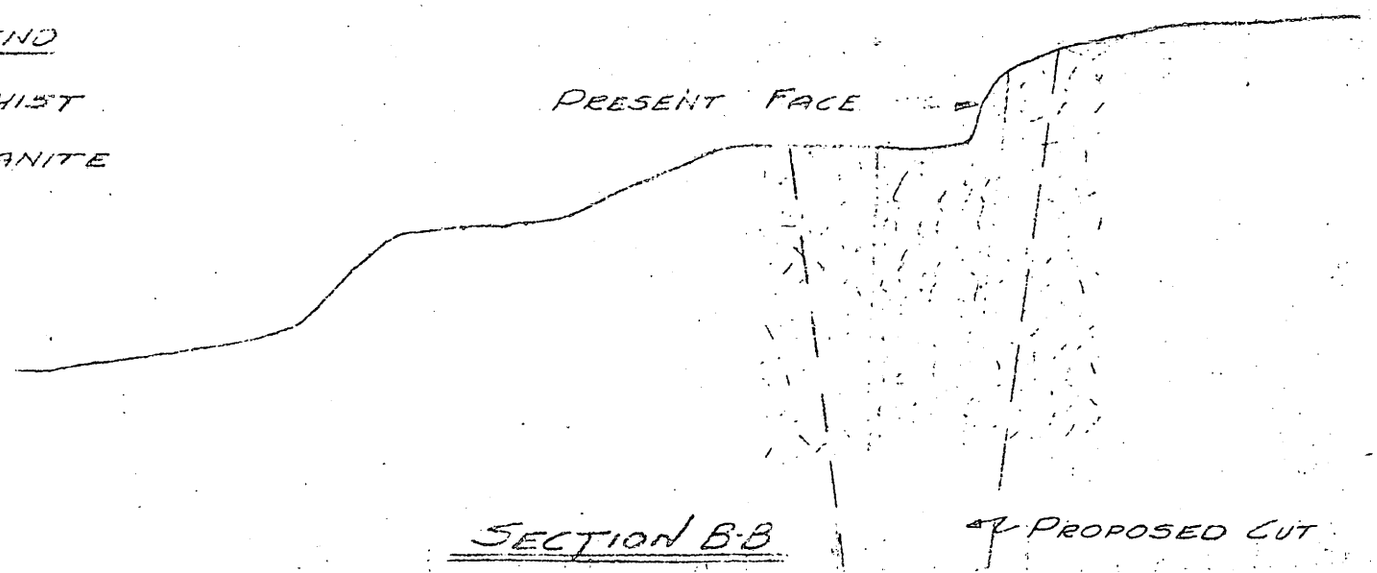


SECTION A-A

LEGEND

SCHIST

GRANITE



SECTION B-B

6/9/53 - db.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

COPY

May 28, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2697, L & I Uranium Development Co.

Reference is made to your letter of February 25, 1953.

Here are the original and three copies of the Field Team Report on the subject docket, which denies exploration assistance.

A. B. Needham
Executive Officer, Field Team
Region V

Attachments

CC C. E. Dutton
Region V
df
files

Reviewed by
DMEA OPERATING COMMITTEE
6-5-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM REPORT

L & I URANIUM DEVELOPMENT COMPANY

DMEA DOCKET 2697

A. J. Martin, Mining Engineer
U. S. Bureau of Mines

Rollin C. Vickers
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
6-5-53
(date)

Geologic report on the L & I No. 2 claim

Dickinson County, Michigan

R. C. Vickers

U. S. Geological Survey

Docket: DMEA 2697

Commodity: Uranium

The L & I No. 2 claim was examined on April 7, 1953, to appraise the feasibility for a DMEA loan which was requested by the owners to explore the property for uranium. This work was done on behalf of the Division of Raw Materials, U. S. Atomic Energy Commission.

The No. 2 claim is one of three prospects which the owners, James J. Leitch and Thad D. Isham, have located for radioactive material in that area. This report is concerned only with claim No. 2 on which the owners have requested DMEA assistance.

The L & I No. 2 claim is about 4 miles northwest of Felch, Michigan (7.9 miles by road), and is in the N½N½ sec. 13, T. 42 N., R. 29 W., Michigan Meridian.

Road log to No. 2 claim, based on speedometer mileage:

0.0 County highway department garage in Felch, Michigan. Proceed west on Michigan Highway 69.

3.2 Junction. Turn right on road that leads to Six Mile Lake.

5.3 Fork, bear right.

5.9 Junction. Take right turn up hill and across hay fields.

7.0 Junction. Take left turn.

7.2 Fork. Keep to the right.

7.9 Open cut at claim No. 2 on the right side of the road.

The last 2 miles into the property can only be traveled with a vehicle equipped with four-wheel drive.

The prospect is situated on the west side of a granite knob, about 500 feet in diameter, that rises about 30 feet above the surrounding relatively flat area. The prospect consists of a small open-cut bench, about 35 feet long and about 15 feet high at the center, that has been cut mainly in a fractured and altered biotite schist zone in granite (fig. 1). The band of biotite schist trends northward and dips in general vertically. The schist is well exposed only in the open cut, but it may be traced for about 50 feet along the strike. The schist zone is about 5 feet wide north of the open cut and appears to widen to about 10 feet near the center of the open cut. No outcrops of the schist zone were observed north or south of the area shown in figure 1. A few veinlets of quartz with small amounts of orthoclase and pyrite cut the schist but were not confined to the areas exhibiting abnormal radioactivity.

Abnormal radioactivity, detected with a Nuclear Research Corporation Scintillometer, model SBX-5, is sporadically distributed in the schist and ranges from 0.05 to 2.0 mR/hr (background 0.03 mR/hr). Only a few hundred pounds of material in the open cut gave scintillometer readings that indicated a radioactive content of greater than 0.01 percent equivalent uranium. A sample of the most radioactive unweathered

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EXPLANATION

Granite

Outcrop — Inferred

Biotite schist

Geologic contact
Dashed where approximately located

85
Strike and dip of foliation

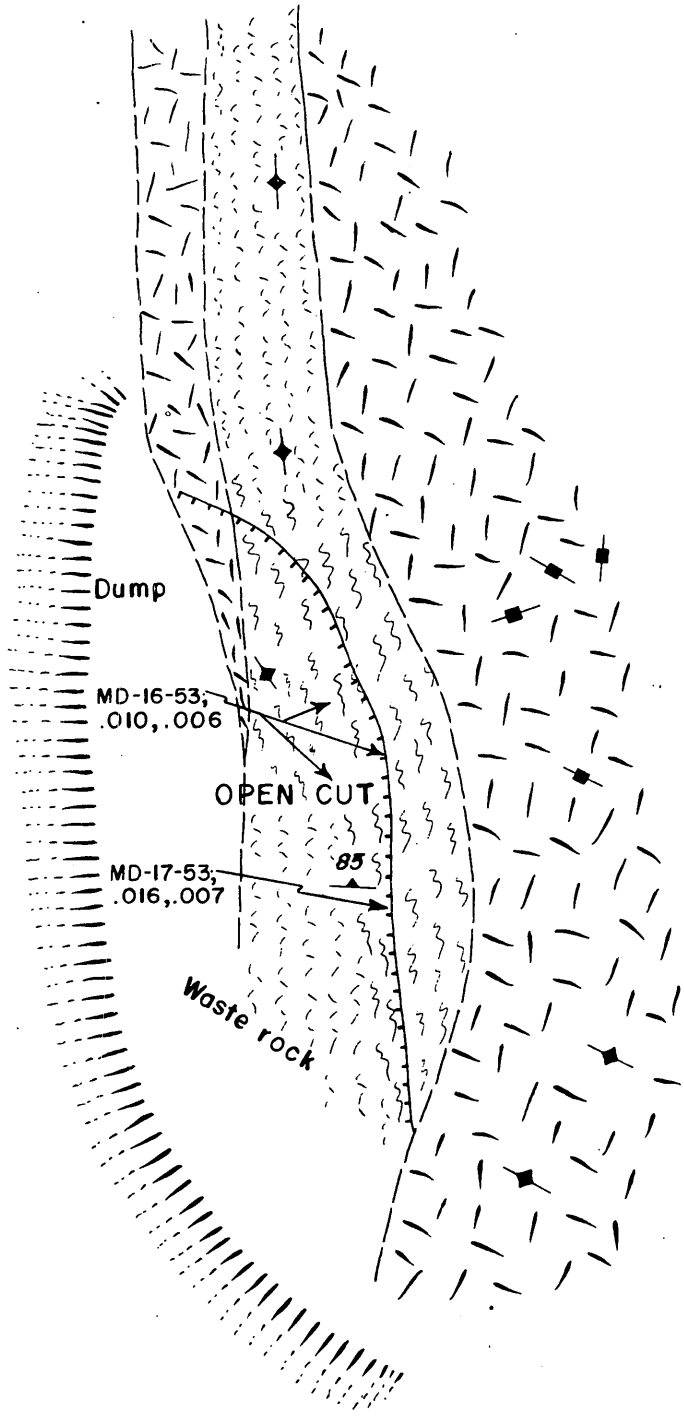
Strike of vertical foliation

Strike of vertical joints

MD-17-53;
.010, .006
Sample location
Showing sample number, percent equivalent uranium and percent uranium

0 — 10 FEET
SCALE

N



Tape and compass map by R. C. Vickers,
April, 1953

Figure 1. Geologic map of the L & I No. 2 claim, N 1/2, NW 1/4, sec. 13, T. 42 N., R. 29 W., Dickinson County, Michigan.

material contained 0.016 percent equivalent uranium and 0.007 percent uranium. A grab sample of material from the dump contained 0.010 percent equivalent uranium and 0.006 percent uranium and is representative of the average grade of the abnormally radioactive portions of the schist exposed in the open cut. The results of these analyses for equivalent uranium and uranium as well as analyses of selected samples of the most radioactive rock found by other investigators (Everhart, 1952, p. 9) are tabulated below.

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1361-J	H. V. Lee, 1950	0.02	—	
—	L. P. Barrett, 1951	0.01	0.003	
—	L. P. Barrett, 1951	0.029	0.002	
4582-B	D. L. Everhart, 1952	0.009	0.002	
4582-C	D. L. Everhart, 1952	0.02	0.008	Fresh, most radioactive rock.
MD-16-53	R. C. Vickers, 1953	0.010	0.006	Grab sample, dump.
MD-17-53	R. C. Vickers, 1953	0.016	0.007	Most radioactive rock, unweathered.

The above analyses indicate that most of the radioactivity is probably due to thorium and that only small amounts of uranium are present.

Petrographic examination of the schist shows that most of the radioactivity is associated with a bleached and sericitized portion of the schist. No radioactive minerals were seen in thin sections, and it is believed that most of the radioactivity is caused by small amounts of a finely disseminated thorium-bearing mineral.

Based upon the results of the geologic investigation of this property, it is recommended that the DMSA application be denied for the following reasons:

1. Only a few hundred pounds of rock containing radioactive material of possible economic significance is present.

2. Most of the radioactivity is probably due to thorium.

3. Experience with other similar occurrences of abnormal radioactivity in the area indicates that the radioactive "concentration" is very limited in horizontal and vertical extent.

Reference

Everhart, D. L., 1952, Radioactive mineral deposits in Dickinson County, Michigan: U. S. Atomic Energy Commission RMO 984.

DMEA Docket 2697 Uranium
L & I Uranium Development Company
1418 E. Main Street
Owosso, Michigan
Dickinson County, Michigan

SUMMARY AND CONCLUSION

Claim No. 2 of L & I Uranium Development Co., located in N1/2 NW1/4 sec 13, T. 42 N., R. 29 W., about four miles northwest of Felch, Mich., was examined April 7, 1953, by a DMEA field team. A narrow band of biotite schist has been partially exposed. The exposed section averages 8 feet in width, 35 feet in length, and the highest vertical face is 15 feet. The radioactivity is very low and any tonnage that would develop would be relatively small.

The field team recommends denial of Government assistance on this project.

The Project The I & I Claim No. 2 was examined on April 7, 1953, by the [illegible] field team. This claim is located in the N1/2 NW1/4 sec. 13, T. 12 N., R. 29 W., and is about four miles northwest of Pelch, Mich., and about eight miles by road.

At the time of this examination the I & I Uranium Development Co., had excavated a bench about 35 feet long, 5 feet wide, and 15 feet with an over-all length of bench about 70 feet. A narrow band of schist, which is slightly radioactive, was exposed in this bench. A sample 3½ about 7 feet wide was taken and analyzed radiometrically and gave a uranium equivalent of 0.005 percent.

The attached sketch indicates the approximate amount of excavation made since Mr. L. L. Everhart's examination and probably consists of the entire bench.

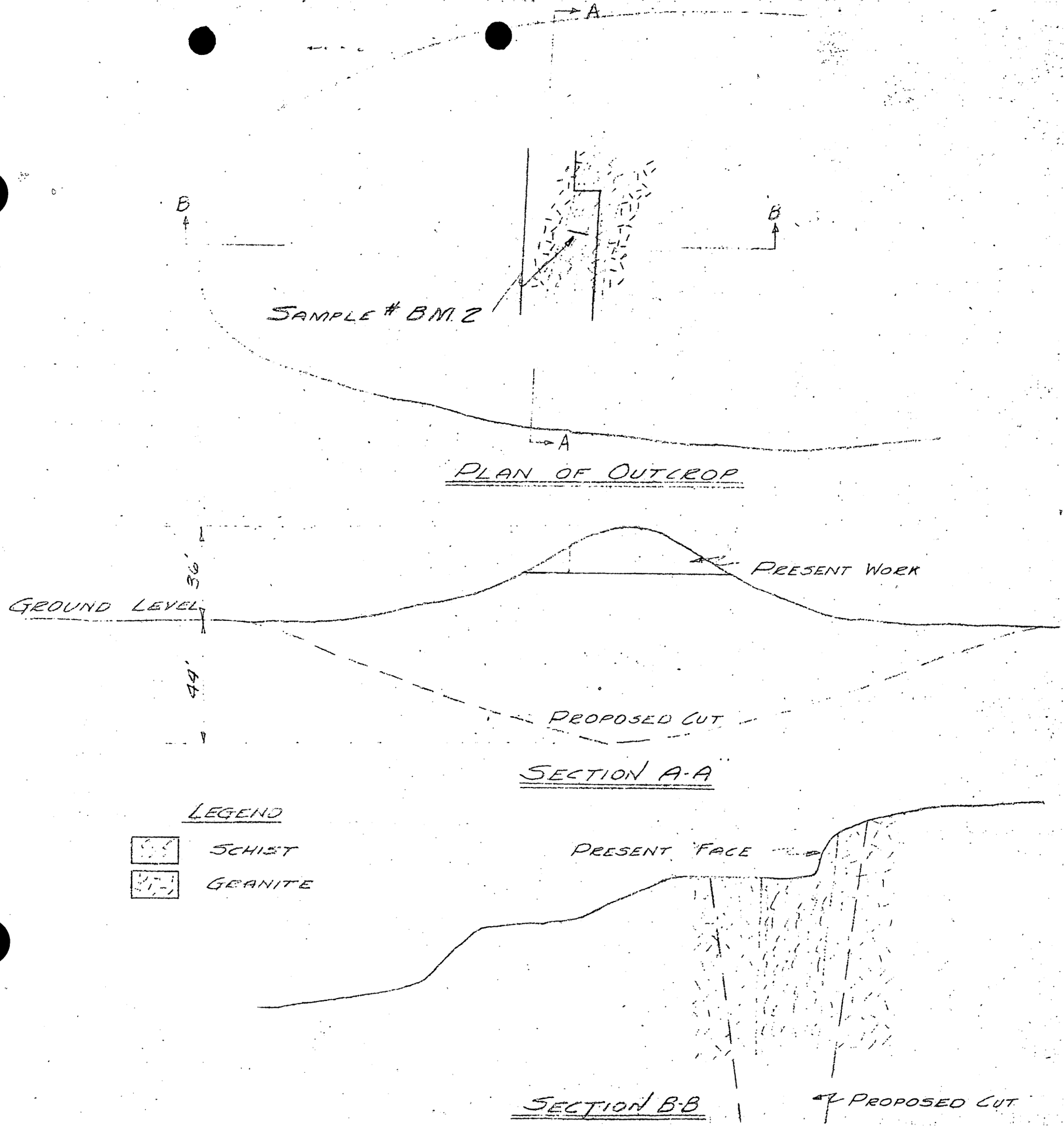
Proposed work The Operator is a little vague on his proposed work, but he is definite in his opinion that he must lower each square foot of the outcrop vertically 80 feet in order to explore the schist at depth. No amount of persuasion would change his opinion. Referring to the attached sketch, at the present time there is a bench about 70 feet long and 15 feet high. At the highest point in this bench the schist is exposed for about 35 feet with an average width of approximately 8 feet. Secs. AA and BB show roughly the excavation the Operator proposes to make. If it were desirable to further explore this outcrop, two trenchs at one-tenth the cost of the open cut would furnish nearly the same information.

Proposed costs Since the proposed exploration method is not considered sound, and because of the very low radioactivity and small tonnage of the deposit, not much consideration was given to the proposed costs except to note they are very high relative to the amount of information that would be furnished. For instance, provision is made to both bulldoze the broken rock as well as hand muck it.

Personnel Mr. Thad L. Isham, who would be in charge of the operation, has neither the training, nor the experience that would fit him for such a job. He allegedly has some three years' experience prospecting for uranium, otherwise he has been associated with the automobile business. Mr. Isham does not give any evidence of having received any sound technical advice; if he has received it, he has failed to absorb it.

Mr. James A. Leitch, the other member of the partnership is financially capable of furnishing the company's share of money, but he has no mining background.

Equipment and buildings There are no buildings or equipment on the property.


A
B
B
SAMPLE # BM 2
A
PLAN OF OUTCROP
36'
GROUND LEVEL
PRESENT WORK
44'
PROPOSED CUT
SECTION A-A
LEGEND
SCHIST
GRANITE
PRESENT FACE
SECTION B-B
PROPOSED CUT

FEB 25 1953

Mr. James [illegible] Leitch
[illegible] Development Co.
1412 [illegible] Main Street
Iwosero, Michigan

Re: Docket No. [illegible]-2497 (Grinlue)
Dickinson County, Michigan

Dear Mr. Leitch:

The application for assistance in exploring your property in Dickinson County, Michigan, under the above captioned docket number, has been reviewed by the Base and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. Your application has been referred for a field examination to the Executive Officer of Region V at the following address:

Mr. [illegible] Beckman
Executive Officer
Field Team, Region V
29[illegible] Colfax Ave., South
Minneapolis 5, Minnesota

The Regional Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

C. O. Mittendorf

Administrator

Fitchmidt/jen
2/20/53
cc to: Adm. Reading File
Docket
Messrs. Ellis
Schmidt
Field Team, Region V (2)

FEB 25 1953

Mr. [illegible]
Executive Officer
[illegible] Field Office, Region [illegible]
2200 Colfax Ave., South
Minneapolis 5, Minnesota

re: Docket No. [illegible]-2097 (Franklin, [illegible] & Urbanization Development Co.
Bloomington, Minnesota

Dear Mr. [illegible]:

The subject application is referred to you for your recommendation based on a study of existing reports and a field examination. The facts presented do not appear to justify a project involving 22,000 [illegible]. However, the application is quite vague as to the actual work that is proposed.

[illegible] you any copy of the [illegible] (preliminary report [illegible]) prepared by [illegible] Vermont [illegible] [illegible], and the report by [illegible] of the [illegible] operations of the [illegible] Water Conservation [illegible] in the original application.

Enclosed are [illegible] copies of [illegible] and [illegible] of the [illegible] conditions.

Sincerely yours,

George C. Selfridge

Enclosures

J. H. Hedges

Leader, Branch of Dams

T. P. Thayer

Chief, Branch of Field Survey

Chairman, Operating Committee
[illegible]/jem 2/20/53
cc to [illegible] Reading File
Docket
Chrono. [illegible]-3611
[illegible]-3200
[illegible]-3210
File [illegible] Dr. [illegible]
Field [illegible], Reg. V

FILE COPY
SURNAME:
Nos.

Schmidt
File
Selfridge.

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

FEB 2 5 1953

Mr. [illegible] Neeman
Executive Officer
[illegible] Field Team, Region V
2908 Douglas Ave., South
Minneapolis 6, Minnesota

Re: Docket No. [illegible]-2697 Uranium
[illegible] Uranium Development Co.
Dickinson County, Michigan

J. C. 2/25/53

Dear Mr. Neeman:

The subject application is referred to you for your recommendation based on a study of existing reports and a field examination. The facts presented do not appear to justify a project involving $[illegible]$,000. However, the application is quite vague as to the actual work that is proposed.

Our records show that you have a copy of the Atomic Energy Commission report [illegible]-284 written by [illegible] Verhard dated March 1952, and the report by Gerard [illegible] Vegas of the [illegible] materials operations of the [illegible]. Together with the data in supplementary to the original application.

Enclosed are two copies each of [illegible] by [illegible] Hedges and [illegible] Thayer of the Uranium Commodity Committee.

Sincerely yours,

George C. Selfridge (GVB)

Chairman, Screening Committee

Enclosures
[illegible]:

J. H. Hedges (JHB)
Member, Bureau of Mines

T. P. Thayer (JHB)
Member, Geological Survey

FHSchmidt/jem 2/20/53
cc to: Adm. Reading File
Docket
Messrs. HDKeiser-3641
APButler-3206 G.A.
JHosted-3210 G.A.
Ellis Schmidt Spr. Com.
Field Team, Reg. V

FILE COPY
SURNAME: 700

Schmidt
Ellis
Thayer
Hedges

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

Mr. James L. Leitch
L & I Uranium Development Co.
1418 E. Main Street
Owosso, Michigan

FEB 25 1953

Re: Docket No. [illegible]-2697 (Uranium)
Dickinson County, Michigan

Dear Mr. Leitch:

J.C. 2/25/53

The application for assistance in exploring your property in Dickinson County, Michigan, under the above captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. Your application has been referred for a field examination to the Executive Officer of Region V at the following address:

Mr. A. B. Needham
Executive Officer
DMEA Field Team, Region V
2908 Colfax Ave., South
Minneapolis 8, Minnesota

The Regional Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

FESchmidt/jem
2/20/53
cc to: Adm. Reading File
Docket
Messrs. Ellis
Schmidt
Field Team, Region V (2)

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis DMEA Member
Uranium Commodity Committee

DATE: February 19, 1953

FROM : Arthur P. Butler, Jr. USGS Member, Uranium Commodity Committee

SUBJECT: Information supplementary to application DMEA Docket 2697, James E. Leitch and Thos. D. Isham, applicants, Owosso, Michigan.

Comment

I have reviewed the supplemental information furnished by the applicant with respect to the application identified above and discussed it with Mr. J. O. Hosted, AEC. This data, especially the report "Radioactive Mineral Deposits in Dickinson County, Michigan," by D. L. Everhart, U. S. Atomic Energy Commission , RMO-984, and the memorandum by H. V. Lee, U. S. Atomic Energy Commission on "Reconnaissance trip to the Isham-Leitch claims, Dickinson Co., Michigan," February 12, 1951, are probably adequate for geologic appraisal of the proposed exploration. Only highly selected material assays on more than 0.1 percent uranium, and the information in those reports suggest that the possibility of making a discovery of commercial ore are exceedingly slight. On the other hand, new occurrences of uranium in Michigan are being discovered from time to time, and a small amount of exploration may be warranted at this occurrence to supply information on the habits, form, and extent of such occurrences that can be gained only by exploration.

Recommendation

I recommend that this application be referred to the field team for appraisal of its suitability and feasibility. The attention of the field team is invited to the supporting memorandum and report by AEC personnel. Unless further work has been done since Everhart's report was prepared, the documents probably supply all the pertinent geologic information that could be gained by field inspection. Inspection may be necessary, however, for other reasons.

Arthur P. Butler, Jr.

Arthur P. Butler, Jr.

2/19/53 gla

LEITCH MOTOR SALES

MICHIGAN'S LARGEST AUTOMOBILE AUCTION

Owosso Michigan Every Thursday 12:00 Noon

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WED. and THURS. 2170

OFFICE:
1450 EAST MAIN STREET
OWOSSO, MICHIGAN

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Defense Minerals Administration
RECEIVED
FEB 18 1953

2-16-53

Registered # 2240 - Return Receipt Requested

Ernest Wm. Ellis, Chief
Rare & Miscellaneous Metals Division
Washington 25, D.C.

Re; Docket No. DMEA-2697 9 (Uranium)
Dickinson County, Michigan

Dear Mr. Ellis;

In reference to your letter of Dec. 19th,1952 we want to say that we submitted the additional information to you as you requested to necessitate the processing of our application.

In as much as we have received no reply from you we find it necessary that we ask you to send us this information,as we expect that the weather will permit us to resume operations by March 15th 1953 and we would appreciate your co-operation in this matter.

Thanking you for an early reply, we are,

Sincerely yours,
James E. Leitch
James E. Leitch
L & I Uranium Co.

JEL;r

2/12/53 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 12 1953

February 11, 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Supplemental information, DMEA Docket 2697, James E. Leitch and Thad D. Isham, 1418 E. Main Street, Owosso, Michigan.

I have reviewed the subject supplemental material and discussed it with Mr. Joseph O. Hosted, representative of the Atomic Energy Commission.

It is recommended that the complete application involved, including the subject supplemental material, be forwarded to the field team for investigation and report, and that the attention of the field team be invited to the report by D. L. Everhart, geologist, Atomic Energy Commission, included in the supplemental material.

H D Keiser

H. D. Keiser

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DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 8 1953

January 3,1953

Ernest Wm.Ellis, Chief
Rare and Misc.Metals Division

Re: Docket No. DMEA-2697 (Uranium)
Dickinson County,Michigan

Dear Mr.Ellis

We have covered the questions 4 and 5 of Form MF-103 , of which your office requested in your letter of October 8th, 1952. We hope that the data is sufficient to now process the application.

Very truly yours,

James E. Leitch

James E.Leitch

L & I Uranium Development Co.

JEL/b

LEITCH MOTOR SALES

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OWOSSO, MICHIGAN

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Docket No. - D.M.E.A.-2697 Uranium
Dickinson County, Michigan

Section 4 M.F. 103

(a) Glacial drift removed to bed rock and benches have been bulldozed as working ledges and to remove overburden to find width of chlorite schist formation. The three benches were used to spot the compressor, drilling and blasting equipment, they also made it possible to use a 3/4 Ton Willys pick up to remove rock blasted out to further open the seam for inspection.
Accessibility to the lease has been made possible by the bulldozing of a road from the end of the sixmile lake road, (see map attached) can drive directly to the Uranium occurance. We have possession of state leased land for the purpose of exploration and mining for Fissionable materials and Mr. Isham has supervised all the work done on this leasehold to date.

(b) There has been no commerical production of ores from this leasehold to date.

(c) Refer to the reports of Mr. Everhardt and Mr. H.V. Lee as attached imformation.

(d) Road into the project, rail shipping facilities only 12 miles at Segola, Michigan . Railroad and siding at this point and practically all supplies are available at Iron Mountain, 19 miles from project.

(e) Labor is available and no problem at present time. We have sufficient applications for all labor necessary. Materials, supplies and Equipment are near at hand. A stream of fresh water, open year around, is only about 400 feet from deposit. Power line is not available at present but in case of mining could be brought in, it is approximately 4 miles away at present.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 8 1953

LEITCH MOTOR SALES

MICHIGAN'S LARGEST AUTOMOBILE AUCTION

Owosso Michigan Every Thursday 12:00 Noon

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WED. and THURS. 2170

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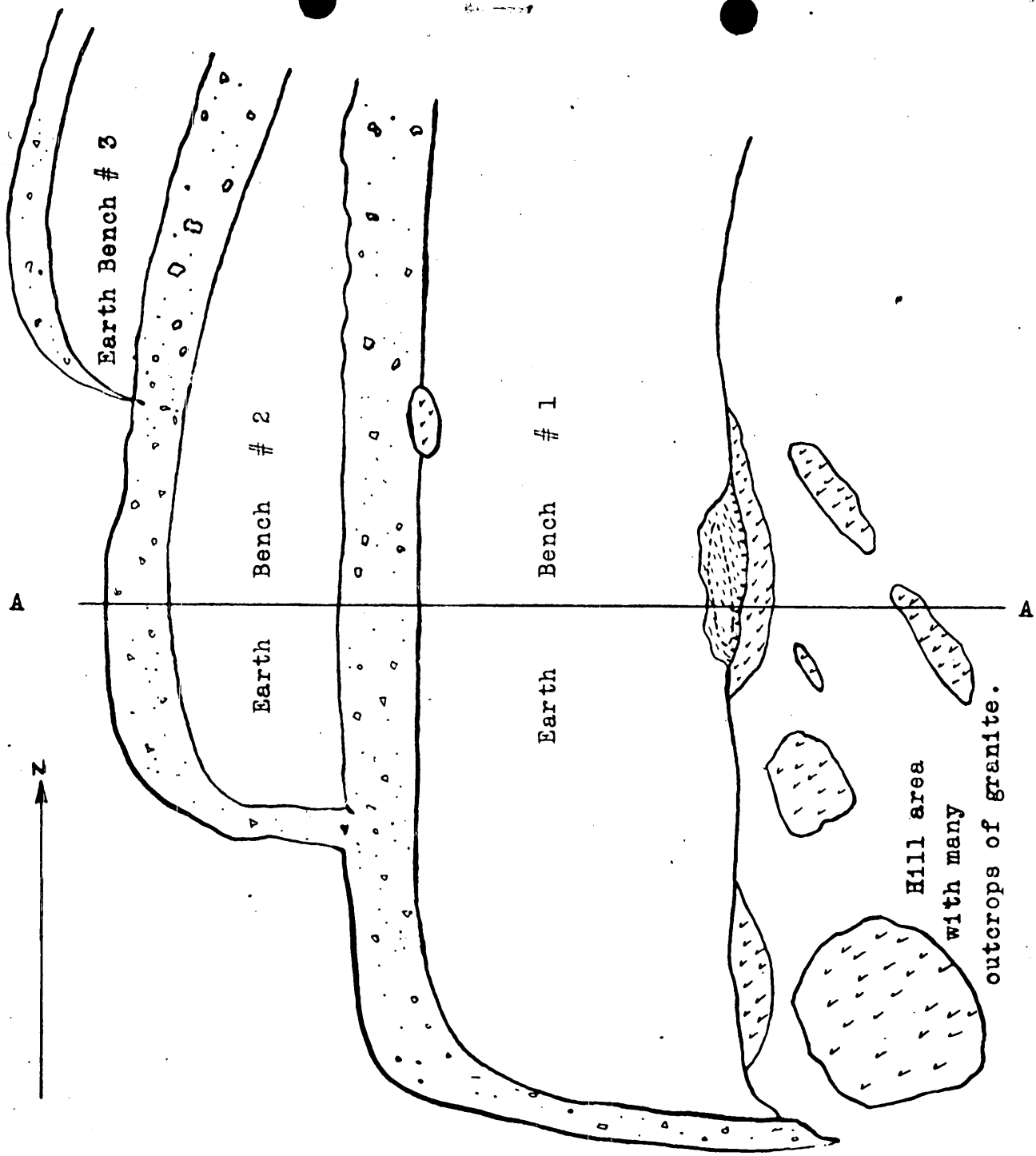
Docket No.- D.M.E.A.- 2697 Uranium
Dickinson County, Michigan

Section MF - 103

5-D Mr. Thad D.Isham will supervise the exploritory operations with the aid of a consultant engineer. The construction of Tool sheds and other build - ings will be done by Mr.Isham who has had fifteen year's experience at this type of work. As to his experience in exploritory work, all work to date has been done by Mr.Isham. He has the knowledge of proper equipment to use for gravity exploritory operations, however any instructions or directions from the mining engineer and geologist, will be closely followed.



Glacial Surface Material

Pink to White granite

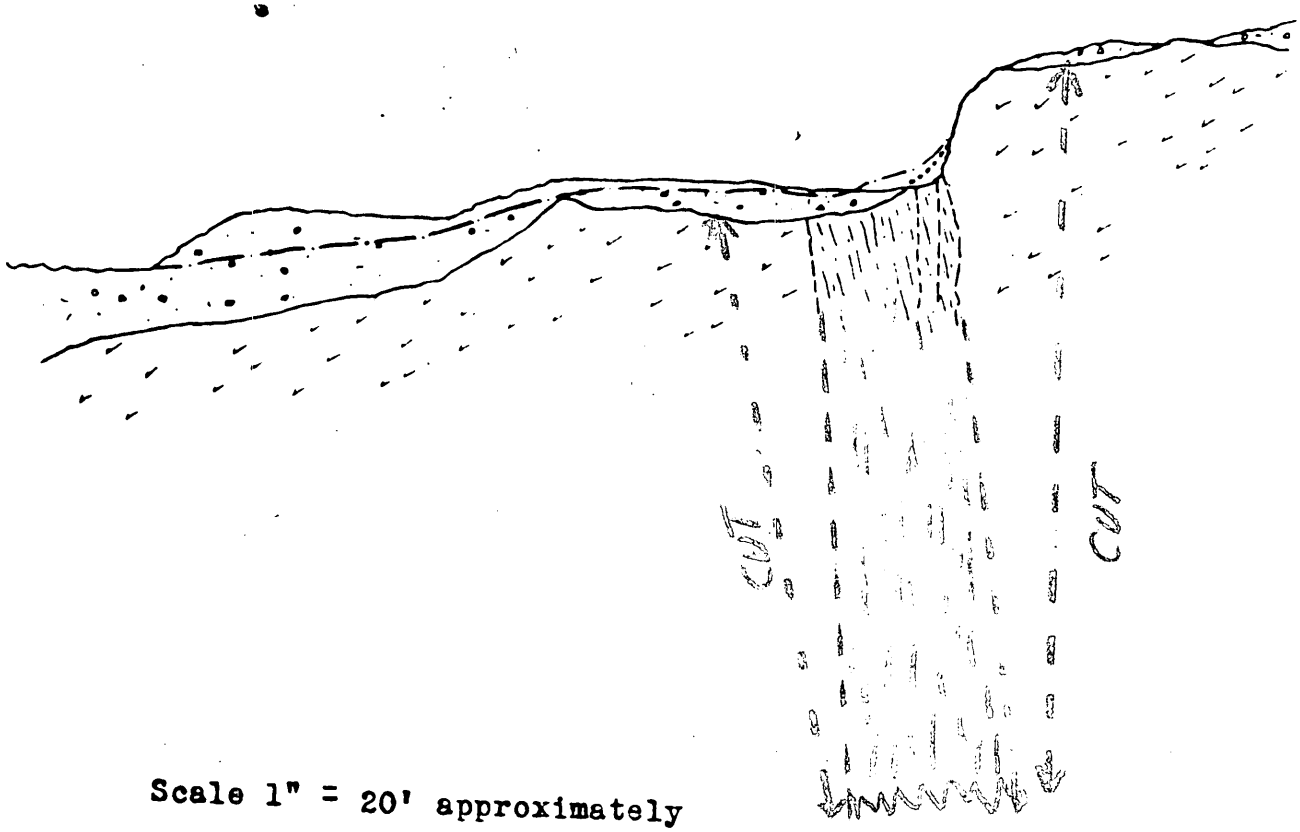
Biotite Schist

Radioactive zone

Scale 1" = 20' approximately

Figure 1. Plan view of prospect area.

Cross Section A-A (Looking North)



Scale 1" = 20' approximately

Glacial Surface Material

Pink to White granite

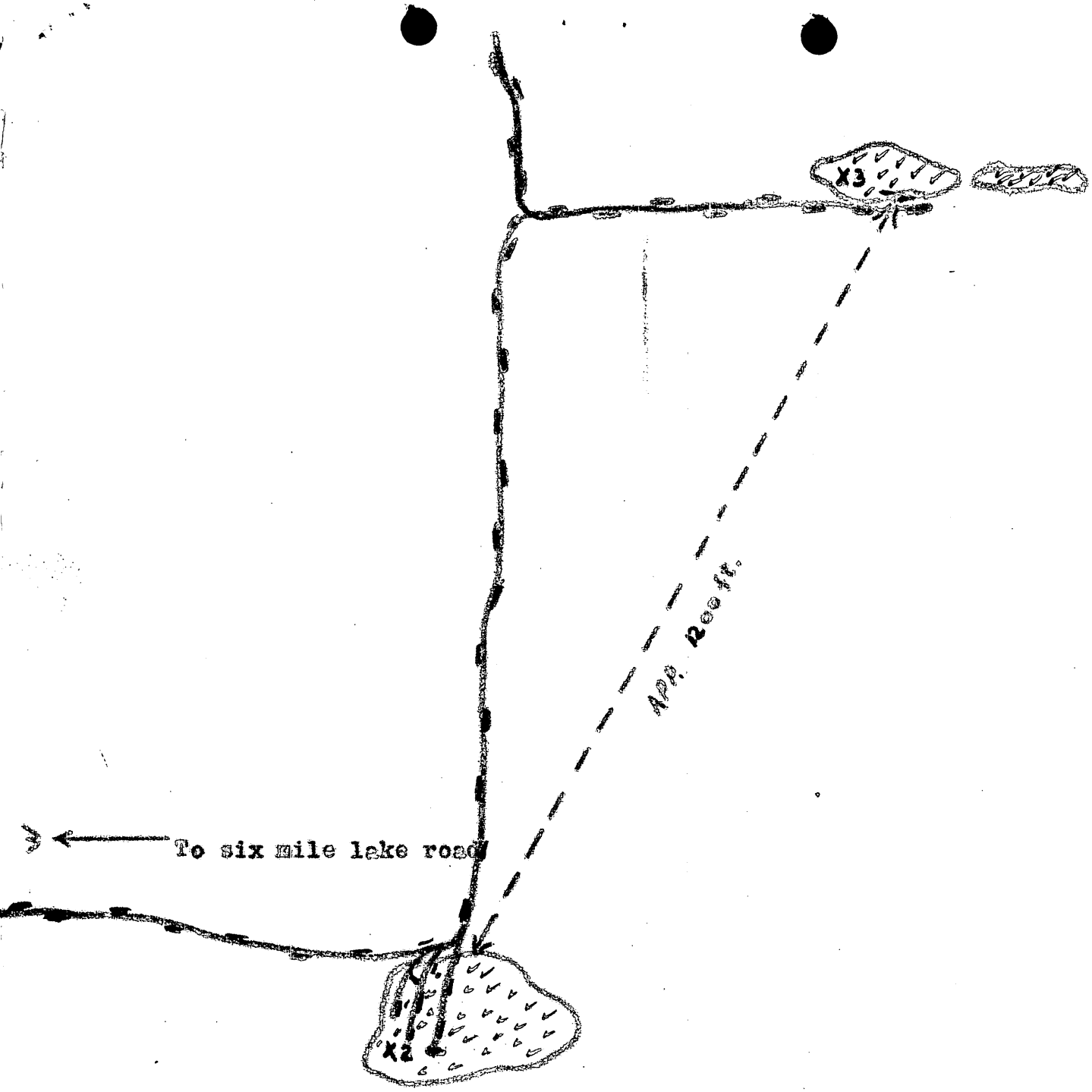
Biotite Schist

Radioactive zone

Former surface of ground

Former rock ledge surface

FUTURE EXPLORITORY WORK



Bulldozed road
Radioactive zone
Outcrops
X2 X3 As U.S.G.S."Redball" Map
Scale ½ inch - 100 ft. approximately
Section 13, T42N, R29W, Dickinson County, Mich.
Outcrops not to scale and are only for identifieation of road and radioactive zones.

RMO-984

RADIOACTIVE MINERAL DEPOSITS

Held By

J. E. LEITCH AND T. D. ISHAM

In

DICKINSON COUNTY, MICHIGAN

by

D. L. Everhart

United States Atomic Energy Commission
Division of Raw Materials
New York Operations Office

Issued: August, 1952

[redacted]

[redacted]

[redacted]

Distribution	No. of Copies
Division of Raw Materials, Washington (J. C. Johnson)	3
Division of Raw Materials, New York (P. L. Merritt)	3
James E. Leitch, Ontonon, Michigan	1

RADIOACTIVE MINERAL DEPOSITS HELD BY J. E. LEITCH AND T. D. ISHAM, DICKINSON COUNTY, MICHIGAN

by

Donald L. Everhart

ABSTRACT

Three claims containing mineralized zones with anomalous radioactivity are held by Messrs. James E. Leitch and Thad D. Isham, of Owosso, Michigan, in Dickinson County, Michigan. The first, leased from the Keweenaw Land Association of Boston, is in the NW¼ of Section 7, T.42N., R29W., about 5 miles northwest of the village of Felch. The other two are about 1½ miles southwest of the first, in Section 13, T.42N., R29W. and are leased from the State of Michigan.

At the first claim, dark red metamorphosed Laurentian granite is intersected by a fracture zone that is mineralized with hematite coatings and which, by field instruments, exhibits anomalous radioactivity. Selected samples of the most radioactive material assay 0.06% U_3O_8 radiometrically and 0.014% U_3O_8 chemically indicating that most of the radioactivity is due to small concentrations of thorium.

Claim No. 2 is characterized by a fracture zone cutting massive black biotite schist, parallel to a contact with coarse-grained granitic gneiss of the Laurentian formation. Radioactivity ranging from 3 to 10 times background is registered for 30 feet along the fracture.

A few tons of rock have been blasted from a prominent outcrop along the zone, and samples of the most radioactive and freshly blasted rock adjacent to the fracture assay 0.02% U_3O_8 radiometrically and 0.000% U_3O_8 chemically.

Claim No. 3, lying about 1200 feet northeast of No. 2, is very similar geologically and picked samples of the most radioactive rock in a 50 foot mineralized fracture zone assay 0.02% U_3O_8 radiometrically and 0.002% U_3O_8 chemically.

The above grade figures and size of the known and indicated mineral concentrations strongly indicate that none of the three claims contain commercial quantities of uranium ore, near the surface. However the presence of uraninite, the primary oxide of uranium, in Claims No. 2 and 3 may justify at least a moderate exploration effort to test the uranium-bearing structure at depth in the hope of discovering higher-grade deposits.

INTRODUCTION

Radioactive samples from properties held by Mr. J. B. Leitch and T. D. Isham, of Owosso, Michigan, in Dickinson County, Michigan were submitted to the A.E.C. in 1950. An examination of the properties was made by H.V. Lee, then Chief of the General Exploration Branch of the A.E.C., on November 11, 1950 and described in a memorandum report dated February 12, 1951. Mr. L.P. Barrett, in charge of the Division of Raw Materials' exploration contract in Michigan, examined the properties in the summer of 1951 and submitted results of several sample assays on December 7, 1951. Finally, the writer re-examined the properties in the company of Mr. Isham on July 15, 1952 in order to observe the results of blasting on Claim No. 2, and to make a current appraisal of the potentiality of the properties as uranium ore producers.

CLAIM NO. 1

Claim No. 1, leased by Messrs. Leitch and Isham from the Keweenaw Land Association of Boston, Massachusetts, lies in the NW¼ of Section 7, T.42N., R28W., and is accessible by about 5 miles of graded road north and west of the village of Felch (see Fig. 1).

The claim is underlain by scattered outcrops of dark red gneissic Laurentian granite of Archean age. The granite is marked by its metamorphosed character, high content of jasper, and hematite staining. In one prominent outcrop a small group of parallel vertical fractures trending N.15-20E. are filled with coatings of specular hematite, and

along a ten-foot sector of this fracture zone, readings of several times background are recorded on field radiometric instruments. However, assays of carefully picked samples of the most radioactive material in the zone are as follows:

Laboratory No.	Collector (Year)	$\%U_3O_8$ (radiometric)	$\%U_3O_8$ (chemical)
1361-C	F. Pardee (1950)	-	0.031
1361-H	H.V. Lee (1950)	-	0.07
-	L.P. Barrett (1951)	0.013	0.001
-	L.P. Barrett (1951)	0.009	0.001
-	L.P. Barrett (1951)	0.065	0.024
4582-A	D.L. Everhart (1952)	0.06	0.014

No other anomalous radioactivity has been noted on the property.

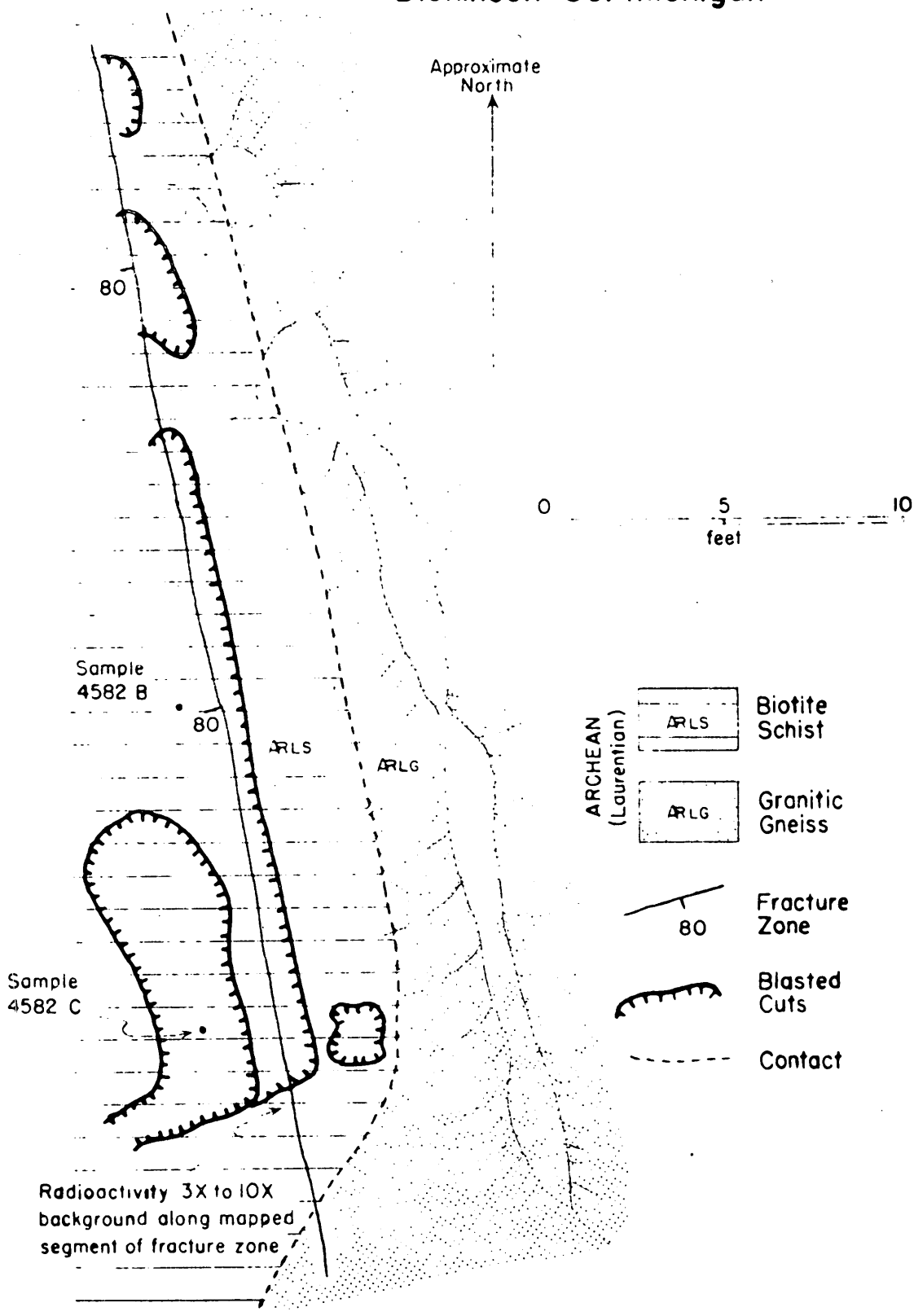
CLAIM NO. 2

Claim No. 2, which is leased from the State of Michigan, is in Section 13, T.42N., R29W., about 1½ miles southwest of Claim No. 1. An old logging road, running eastward from the Sagola-Randville highway, reaches a point within one mile of the deposit, but the eastern end of it is nonpassable during much of the year (see Fig. 1). Heavy equipment is towed to the property by means of a bulldozer capable of penetrating heavy brush and undergrowth.

The radioactivity noted on this claim lies along a prominent fracture that transects the west edge of a massive bedrock ledge (see Fig. 2).

Fig. 2

LEITCH ISHAM CLAIM No. 2
Section 13, T.42.N., R.29.W.
Dickinson Co. Michigan



Sketch by
D. L. EVERHART

The western part of the outcrop is underlain by massive black mica schist containing numerous small erratic quartz stringers and feldspar concentrations. The rest of the outcrop is underlain by coarse-grained granitic gneiss. Both rock types are members of the Laurentian formation of Archean age. The fracture cutting the schist trends N.10W. and dips 80°SW. and for about 30 feet along the fracture, several tons of schist have been blasted from the outcrop adjacent to the radioactive segment of the fracture zone. Except for this 30 foot zone, no other anomalous radioactivity has been noted on the property.

Assays of selected samples of the most radioactive rock found by various investigators on the prospect are tabulated below:

Sample No.	Collector (Year)	$\%U_3O_8$ (radiometric)	$\%U_3O_8$ (chemical)	Remarks
1361-I	H.V. Lee (1950)	-	0.03	
1361-J	H.V. Lee (1950)	0.02	-	
-	L.P. Barrett (1951)	0.01	0.003	
-	L.P. Barrett (1951)	0.029	0.002	
4582-B	D.L. Everhart (1952)	0.009	0.002	
4582-C	D.L. Everhart (1952)	0.02	0.008	Collected from freshly blasted rock in the most radioactive spot in the prospect.
		0.068	0.015	
		.0171	.0035	

Radiometric is 5 times the chemical
But no dependable ratio

CLAIM NO. 3

Claim No. 3, also leased from the State of Michigan, is in Section 13, T.42N., R29W., about 1200 feet N.35E. of No. 2. Here a prominent gneissic granite outcrop (of the Laurentian formation), some 30 feet in height is transected by a shear zone in which there are numerous quartz stringers. For a length of about 50 feet along the shear, which trends N.80W. and dips 75° SW., radioactivity of 4 to 5 times background is recorded on field radiometric instruments. Assays of picked samples of the most radioactive parts of the zone, as located by Lee and the writer, are as follows:

Sample No.	Collector (Year)	$\%U_3O_8$ (radiometric)	$\%U_3O_8$ (chemical)
1361-K	H.V. Lee (1950)	-	0.01
4582-D	D.L. Everhart (1952)	0.02	0.002

MINERALOGY

Carefully hand-picked concentrates of the radioactive mineral in specimens selected by the writer from Claim No. 2 were prepared by mineralogists in our New York laboratory. These were submitted to the U. S. Geological Survey for X-ray study and the radioactive mineral was determined to be uraninite. Identification of similar material, collected by others in 1950, has also indicated minute amounts of pitchblende, a variety of uraninite, in specimens said to be collected in both Claims No. 2 and 3.

CONCLUSIONS

From the limited exposures and relatively small amount of exploratory work on the properties, no realistic quantitative estimate of ore reserves can be made. However the small linear extent and narrow width of the exposed radioactive rock, together with the low chemical assays of the picked samples, indicates no workable uranium ore at the surface.

Blasting on the No. 2 claim has only been surficial, and since uraninite has been identified at the surface there is a possibility that better concentrations of primary uranium oxide might conceivably be encountered at depth along the controlling fractures. From experience with similar deposits near the east shore of Lake Superior, however, this possibility is not believed to be particularly strong.

URANIUM LEASE NO. 2

Schedule A - Fee Ownership

Thad D. Isham and James E. Leitch

Township forty-two North (T 42 N), Range twenty-nine West (R 29 W)

Section twelve (12): South half of Southwest quarter ($S\frac{1}{2}$ of $SW\frac{1}{4}$).

Section thirteen (13): North half of Northwest quarter ($N\frac{1}{2}$ of $NW\frac{1}{4}$).

ADDRESS REPLY TO:

RAW MATERIALS OPERATIONS
U. S. ATOMIC ENERGY COMMISSION
P. O. BOX 30, ANSONIA STATION
NEW YORK 23, NEW YORK

UNITED STATES
ATOMIC ENERGY COMMISSION
RAW MATERIALS OPERATIONS
NEW YORK OFFICE

and refer to:
RMEM:MM:ps

September 20, 1950

Mr. Ted D. Isham
Hardwood, Michigan

Dear Mr. Isham:

Please refer to our letter of August 15, 1950. We have now received the results of the chemical assays of the two samples which we described to you in that letter. They are as follows:

Sample Number 1361D, labeled by you number 14, which showed by radiometric tests 0.4% U_3O_8 equivalent showed by chemical assay 0.3% U_3O_8. 1.030

Sample Number 1361E, labeled by you number 15, showed by radiometric tests 0.1(7)% U_3O_8 equivalent and by chemical assay 0.16% U_3O_8.

Very truly yours,

Robert D. Nininger

Robert D. Nininger
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RECONNAISSANCE TRIP TO ISHAM-LEITCH CLAIMS, DICKINSON COUNTY, MICHIGAN

SYMBOL: RMEE:HVL:sgs

Summary

Radioactive occurrences have been reported throughout the Northern Peninsula of Michigan but, for the most part, it was found that the radioactivity was due to thorium. The first uranium occurrence reported was the Jones & Laughlin discovery in Baraga County, and the second was the Isham find in Dickinson County. On the Isham properties pitchblende occurs in narrow shear zones up to six inches in width and thirty feet in length. Within the shear zone the radioactive concentrations could be traced for a maximum distance of ten feet along the strike. One picked sample assayed 0.30% U_3O_8 but the average sample carried less than 0.10% U_3O_8. In the absence of drill hole or other underground information on the occurrences, it is impossible to properly evaluate them or to make an estimate of the reserves. Although there is little evidence to indicate the presence of commercial deposits of uranium, the area is new and little is known of its mineral resources.

General

The Northern Peninsula of Michigan has been the scene of a very active search for uranium during the past year but most of the radioactivity was found to be due to the presence of thorium and interest in uranium prospecting waned somewhat. Early in the fall of 1950, two samples were sent to our New York laboratory by Mr. T. D. Isham, Owosso, Michigan, from Dickinson County; pitchblende was tentatively identified in each sample In order that further information be obtained on the area prior to the closing in of the winter season, an immediate trip was arranged to the property. Mr. T. D. Isham, co-owner of the claims, met the writer in Felch on November 11, 1950 and a short visit was made to the three uranium occurrences discovered by Mr. Isham.

The general geology of the area is shown on the Centennial Geological Map of the Northern Peninsula of Michigan, 1936, published by the State Geological Survey. According to reports, most of the land in the vicinity is state owned but the mineral rights are in the names of several land companies which formerly held the timber rights.

Prospect No. 1 is located four miles north and 1 mile west of Felch in the NW¼ of Section 7, T42N, R28W, Dickinson County. The infrequent outcrops in the area are predominantly of reddish brown gneissic granite and black mica schist cut by numerous, rather discontinuous east-west shear zones.

The radioactive zone from which the pitchblende had been reported was a minor, vertical shear zone striking east-west within which were a number of very thin hematite stringers up to ½ inch in width. There was no visible uranium mineralization but the strongest radioactivity was found in small, scattered areas in the hematite stringers. The entire zone as exposed was less than ten feet long, and efforts to trace the zone beyond the one exposure were of no avail as the shear zone died out several feet to the west and was obscured by overburden to the east.

Picked samples of the most highly radioactive zones in the hematite stringers gave the following assay results: 0.30% (Isham sample), 0.03 and 0.07% U_3O_8.

Prospects Nos. 2 & 3 are located approximately 1½ miles southwest of No. 1, in Section 13, T42N, R29W and are easily reached by means of an old logging road east of Sagola.

Prospect No. 2 is in a black mica schist at the south edge of an isolated knob of reddish brown coarse-grained gneissic granite. The highest radioactivity was found in scattered, small and irregular zones a few inches across within the schist, a few inches from the schist-granite contact. The contact zone, trending east-west was exposed for approximately ten feet and no extension of the radioactive zone could be found.

Picked samples of the radioactive zone contained only a few traces of a yellow secondary uranium mineral and assays for U_3O_8 ran from 0.02 - 0.10%. Pitchblende had been tentatively identified in one of the Isham samples from this outcrop. As in the case of Prospect No. 1, the occurrence at No. 2 is insufficiently exposed to permit an appraisal of its possibilities.

Prospect No. 3 is located about 1000 feet north of No. 2 point, in a small isolated knob of coarse-grained reddish brown gneissic granite. This occurrence is the most favorable appearing of the three and is also the most readily explored at depth. Radioactive mineralization was found in two sections of the outcrop, one along a ten foot vertical cliff face and the second twenty feet north in a six inch vertical shear zone cutting the granite. Along the cliff face are a number of scattered areas on which abnormally high readings were obtained with the counter but there was no visible uranium mineralization and no samples were taken.

The strongest radioactivity was found in a narrow shear zone where traces of a yellow radioactive mineral, probably gummite, occurs along the fracture surfaces. Although the shear zone could be traced for a distance of thirty feet, only the one ten foot zone gave above background readings on the counter. At the base of the cliff were many large boulders of black mica schist, suggesting the proximity to a granite-schist contact similar to the one at Prospect No. 2.

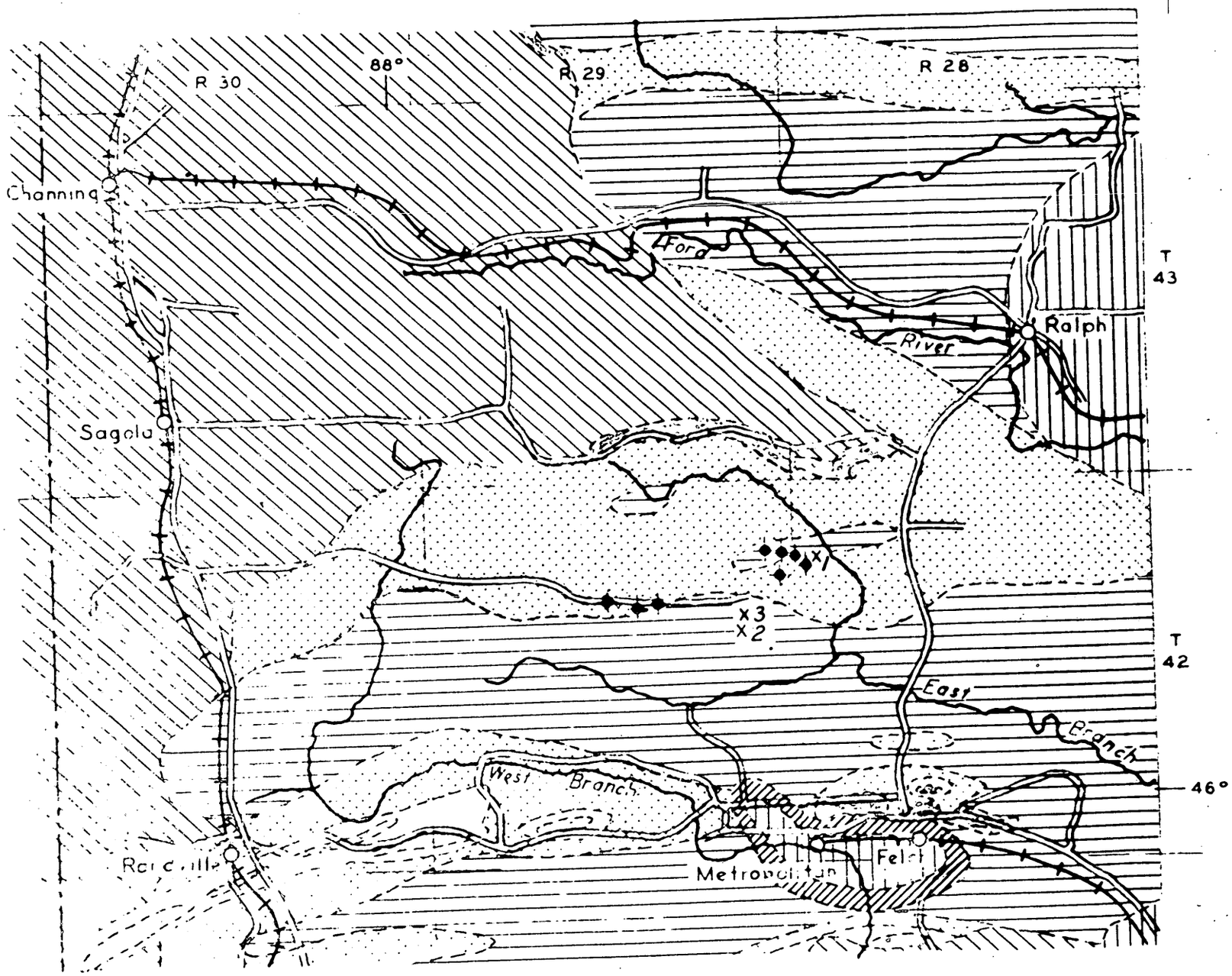
Picked samples along the shear zone ran from 0.01 - 0.16% U_3O_8. A tentative identification of pitchblende was made in one of the samples from this zone.

Enclosures:
1. Sample Descriptions
2. Map

SAMPLE DESCRIPTION
DICKINSON COUNTY, MICHIGAN

Laboratory Number	Location	Prospect Number	% U_3O_8	Pitchblende Indicated	Rock Description
1361-D	Sec. 7 T42 R28W	1 (Isham Sample 14)	0.30	-	Reddish-brown granite.
1361-C	NW¼ NE¼ Sec. 7 T42 R28	1 (Pardee)	.031	-	Area contains small diorite dikes-N80W. Sample from joints in granite.
1361-H	Sec. 7 T42 R28	1 (Lee)	0.07	-	Red brown granite hematite streaks.
1361-F	NW¼ Sec. 13 T42 R29	2 (Lewis, B.M.Mpls.)	0.03 •	-	100 gram split. Chlorite schist.
1361-G	Sec. 13 T42 R29W	2	0.019 •	X	100 gram split of sample furnished by Lewis, Bureau of Mines, Minneapolis.
1361-I	Sec. 13 T42 R29	2 (Lee)	0.03	-	Black mica schist at contact with granite.
1361-J	Sec. 7 T42 R28	2 (Lee)	0.02 •	-	Mica schist.
1361-L	Sec. 7 T42 R28	2 (Lee, Isham Sample)	0.10 •	-	Mica schist.
1361-K	1,000 ft. north of 1361-I	3 (Lee)	0.01	-	Reddish-brown granite. Fracture planes slightly coated with yellow mineral - gummite (?).
1361-E	NW¼ Sec. 13 T42 R29-?	3 ? (Isham Sample 15)	0.16	X	Schistose chlorite rock (mica schist). Pitchblende in very small amount.
1361-B	NW¼ Sec. 13 T42 R29-?	3 ? (Isham Sample 10)	.06	X	Pitchblende in granite. Indication of pitchblende reported by Professor Kerr.

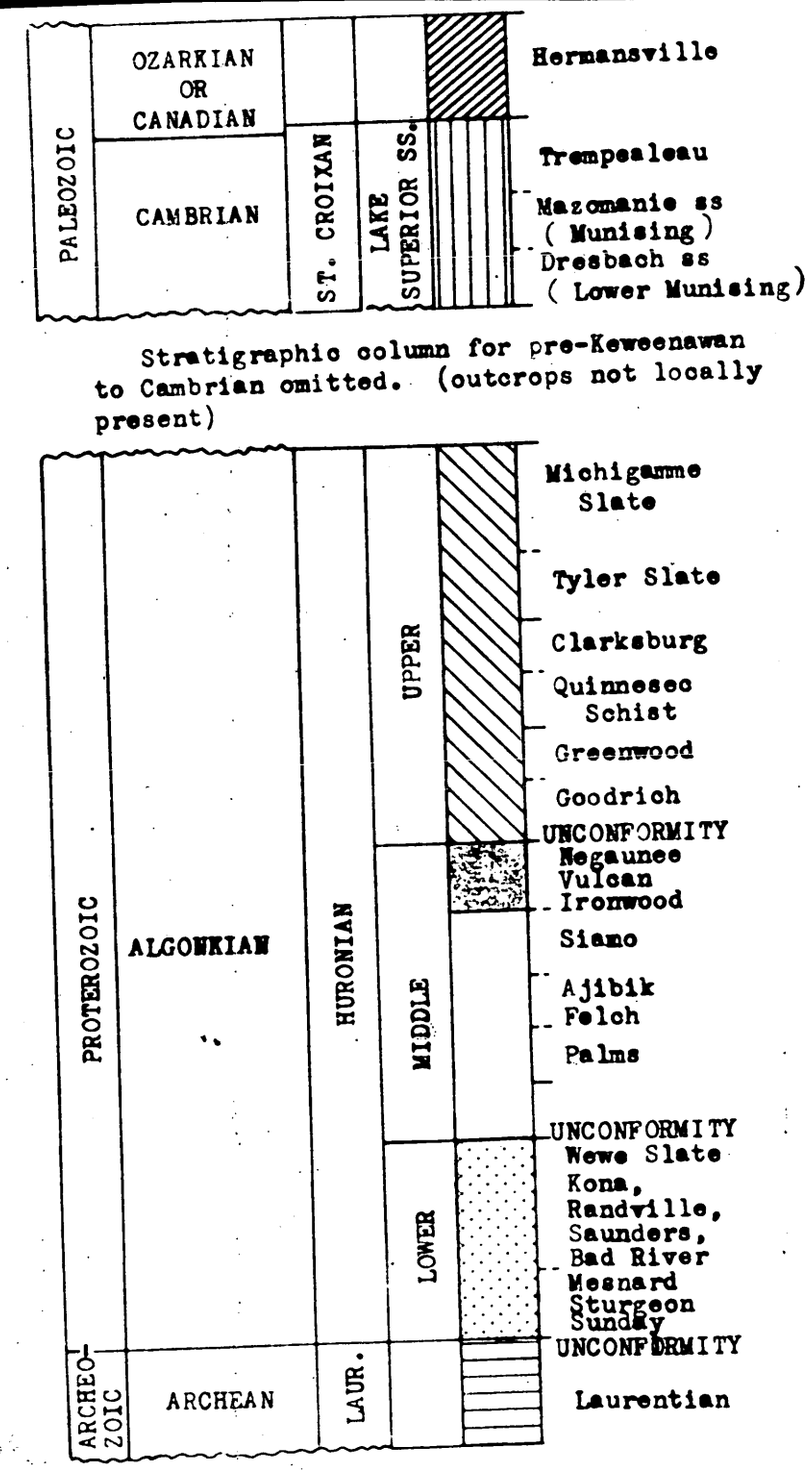
NOTE: All picked samples



GEOLOGICAL MAP OF REPORTED URANIUM OCCURRENCES
DICKINSON COUNTY, MICHIGAN

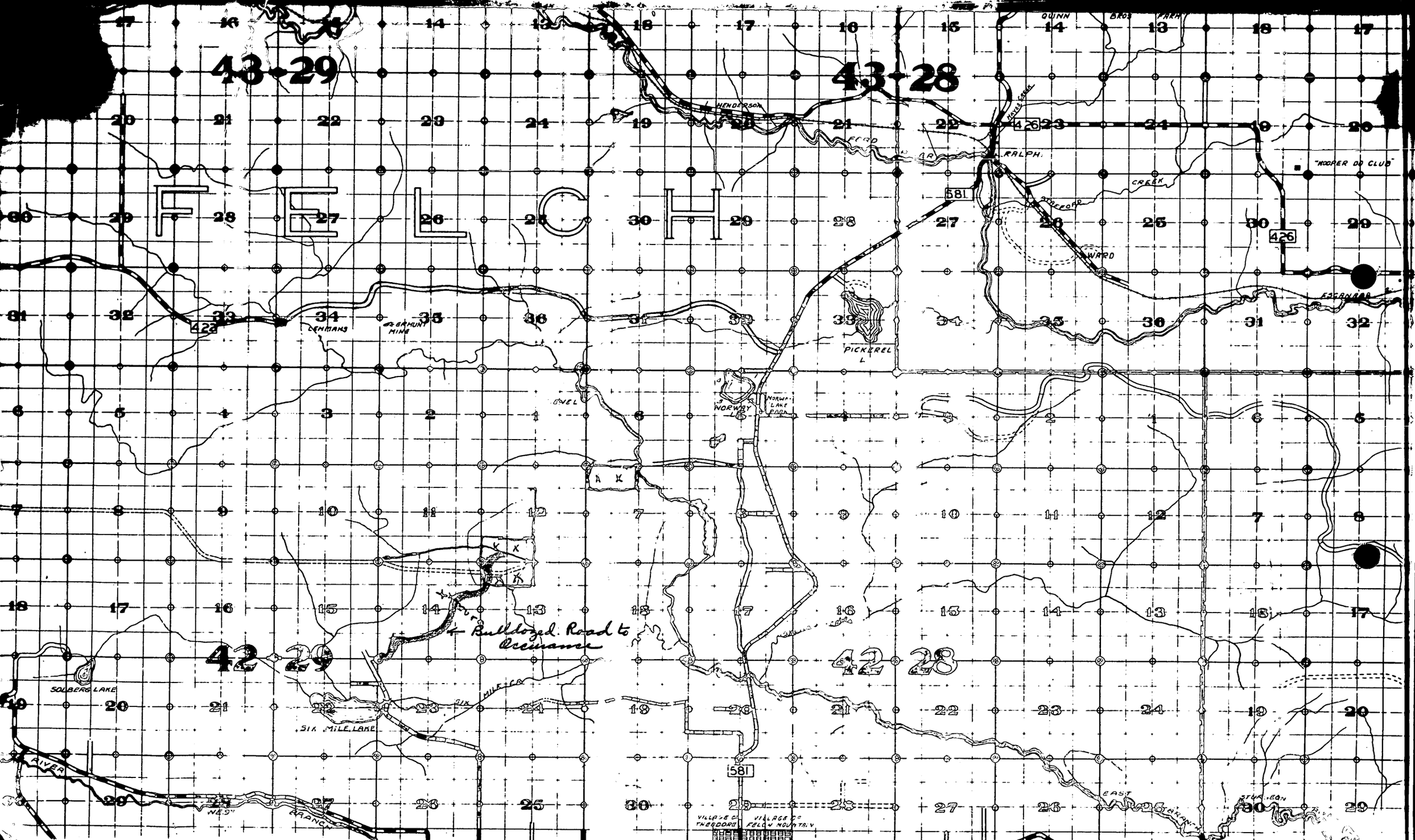
1 0 1 2 3 4 5 MILES

ANOMOLIES SHOWN ON U.S.G.S. "REDBALL" MAP



Stratigraphic column for pre-Keweenawan to Cambrian omitted. (outcrops not locally present)

JAN. 1951


43-29
43-28
FELCH
HENDERSON
RALPH
QUINN BROS PARK
"HOOPER OD CLUB"
CREEK
WARD
EGERNAAR
LEMMANS
PICKEREL L.
NORWAY LAKE
NORWAY L.
GRAVEL
Bulldozed Road to Accuance
42-29
42-28
SOLBERG LAKE
SIX MILE LAKE
SIX MILE CR.
WEST BRANCH
EAST BRANCH
STAVEBAN
VILLAGE OF THEODORE
VILLAGE OF FELCH MOUNTAIN
581
426
422

STATE OF MICHIGAN

Exploration and Mining Lease for Ores
which Are Source Material for Fissionable Elements
and Associated Minerals and Metals

No. 2

THIS INDENTURE, Made this first day of August, 1950, by and between THE DEPARTMENT OF CONSERVATION FOR THE STATE OF MICHIGAN, hereinafter called "Lessor", party of the first part, and THAD D. ISHAM AND JAMES E. LEITCH, Owosso, Michigan, hereinafter called "Lessee", party of the second part.

WITNESSETH, That, for and in consideration of One Dollar ($1.00) in hand paid, the receipt whereof is hereby confessed and acknowledged, and of the execution and delivery by the Lessee to the Lessor of a bond for the performance by the Lessee of its covenants and agreements contained in this lease, the receipt and sufficiency of both of which are hereby acknowledged, and in further consideration of the covenants, agreements and conditions hereinafter contained, to be observed, kept and performed by the Lessee, the Lessor, in accordance with the authority vested in it by The Public Acts of the State of Michigan, and due approval hereof by the State Administrative Board, has demised and leased, and by these presents does demise and lease for the purposes hereinafter set forth, to the said Lessee, its successors and assigns, each and all of the following tracts and parcels of land situated in the County of Dickinson, State of Michigan, and more particularly described as follows:

S½ of SW¼, Section 12, subject to a State Iron Ore Exploration and Mining Lease dated January 3, 1950 to the Hanna Coal and Ore Corporation for the SW¼ of SW¼, Section 12; and the N½ of NW¼, Section 13; Township 42 North, Range 29 West, containing 160.00 acres, but subject in each case to all legal rights of way, easements, licenses, and permits and, with respect to each of certain of said tracts or parcels, to the respective surface conveyances, leases, licenses, or easements as listed after such tract or parcel, but including each, all, and singular the rights, title, interest, and estate of the Lessor in and to each, all, and singular said tracts, parcels, and premises and including all rights under, by virtue of, or in connection with each and all such surface conveyances, leases, licenses, and easements; for and during the term of twenty-five years from and after the date hereof, or until, as to each such respective tract or parcel, this lease shall be earlier terminated in the manner hereinafter provided. Said premises are leased to the Lessee for the purpose of giving and granting to the Lessee, its successors, assigns and sublessees, the exclusive right and privilege of entering into and upon said leased premises and each and every part thereof so long as this lease shall remain in effect with respect thereto, and to explore for, mine, remove, and ship any ores which are source material for fissionable elements and such other minerals and metals directly associated with source material for fissionable elements as are found and contained in the same ores which are source material for fissionable elements, which it may desire, as are or may be found therein or thereon, together with the full right, privilege and authority of constructing, erecting, maintaining, and removing any and all such buildings, structures, machinery, excavations, openings, ditches, drains, water pipes, railroads, truck and wagon roads, tramways, and other improvements, property, and fixtures as may be reasonably necessary, convenient, or suitable for mining, removing, concentrating, and shipping any of such ores or materials or products thereof or for any activities incidental thereto or to any of the rights or privileges of the Lessee hereunder, including full right and authority to divert streams and to remove lateral and subjacent support, and to cave, subside, or destroy the surface or any part thereof, and to dump earth, rocks, waste and lean ores or materials on any part of such surface where it will not interfere with mining, and to commit waste to the extent necessary, usual, or customary in the carrying out of any and all of such purposes, rights, privileges or authorities. It is hereby understood and agreed that the Lessor retains all other rights and interests not inconsistent with the right herein granted, to the extent that the same may be exercised, used, or retained without in any way interfering with the full and free exercise by the Lessee of its rights and privileges hereunder.

While the Lessor represents that it (and the State of Michigan for which it is acting in accordance with due authority) is the owner of the leased premises as hereinbefore set forth, it does not warrant its title thereto and it is therefore specifically understood and agreed that the Lessee shall not, either by accepting and executing this lease or otherwise, be estopped or otherwise prevented from questioning or contesting the Lessor's title to any part or parts of the leased premises, but the Lessee shall be entirely free at any time, or from time to time, in case it shall appear that the Lessor's title as hereinbefore set forth to any part or parts of the leased premises shall be in any way defective, to contest, or to participate in any suit, action, or proceeding for the contesting of the Lessor's title; and that while the Lessor does not agree to refund otherwise to the Lessee any amounts paid hereunder under mistake as to the Lessor's title, Lessor does agree that the Lessee shall have full credit for any amounts so paid to the Lessor as royalty or minimum royalty on account of any ore or tract not belonging to Lessor with the right to use and apply the same in payment or satisfaction of obligations of the Lessee to pay royalty on ore shipped from, or minimum with respect to any part or parts of the leased premises as to which the Lessor has good title.

Definition of Source Material for Fissionable Elements

As used in this lease, the term "source material" shall mean any ore which contains uranium or any other material determined by the United States Atomic Energy Commission to be peculiarly essential to the production of fissionable materials in such concentration as the Atomic Energy Commission may by regulation determine from time to time.

Royalty

That the Lessee shall on or before the 20th day of January, April, July, and October of each and every year, so long as this indenture continues in force, pay a royalty to the Lessor at the rate of ten per cent (10%) of the gross value as shipped for all ores mined from the leased premises and shipped without treatment by the Lessee, as hereinafter provided, during the three months preceding the first day of the month in which the payments are to be made as aforesaid.

That the Lessee shall on or before the 20th day of January, April, July, and October of each and every year, so long as this indenture continues in force, pay a royalty to the Lessor at the rate of ten per cent (10%) of the gross value as shipped, less milling or refining costs, or both, for all concentrates, minerals and metals taken from ores mined and treated on the leased premises and shipped by the Lessee, as hereinafter provided, during the three months preceding the first day of the month in which the payments are to be made as aforesaid.

The value of the uranium or other fissionable elements contained in such ores, concentrates, minerals and metals shall be based on the existing published price, or the price supported by the United States Atomic Energy Commission, or the actual sale price, whichever is the greatest. The value of all materials other than uranium or other fissionable elements contained in the ores shall be based on the average price during the royalty period in which the shipments occur, as published in the Engineering and Mining Journal, or a similar reliable publication, or the actual sale price, whichever is the greater. Provided, however, that the full value of the ores shall be determined by the combined values of the uranium and other fissionable elements and of such other minerals or metals which may be contained in the same ores. All fees and expenses in connection with the evaluation of the mined ores, and the concentrates, minerals and metals taken from the mined ores shall be borne by the Lessee.

Reports on Weights, Analysis and Costs

The Lessee shall submit sworn statements at the end of each royalty period hereinbefore mentioned, showing the certified weights, analysis and values of any and all ores, concentrates, minerals and metals shipped during the preceding royalty period. The Lessee shall also submit sworn statements at the end of each royalty period hereinbefore mentioned, showing actual costs of milling and refining ores mined from the leased premises and so milled and refined to produce concentrates, minerals and metals shipped during the royalty period for which royalty payments are being made.

The method of determining the analysis and grades of ores mined, and of concentrates, minerals and metals taken from ores mined from the leased premises and shipped shall be by agreement between the Lessor and Lessee and shall be in accordance with established and customary practice.

Exploration Period

The period of this lease from the date hereof to and including July 31, 19 53, shall be known as the exploration period, and it is understood and agreed by the Lessee that it will expend the sum of Sixteen Hundred and no/100- - - - -Dollars ($----1,600.00--) prior to August 1, 19 51, and a similar amount for each year of the exploratory period after August 1 19 51, for exploration on the leased premises by drilling, test pitting, trenching, shaft sinking or by such geological methods of exploration as may be approved in writing by the Lessor or for experimental or developmental work on the beneficiation, concentration, or treatment of source material for fissionable elements which may be found in such area. It is understood that the obligation to spend Sixteen Hundred and no/100------Dollars ($---1,600.00----) in any year following the first year shall be satisfied to the extent of the expenditures in prior years shall exceed the total of stated amounts to be spent in such years.

On or before November 1, 19 51, Lessee shall submit a report to Lessor covering the exploration work carried on during the period from the date of this lease to August 1, 1951. Similar annual reports shall be submitted for subsequent years of the exploration period. These reports shall describe the type and extent of exploratory work carried on on the leased premises, and shall contain an expenditure report for the exploratory work conducted by the Lessee during the required period. Lessee also shall submit drill records, file maps and sections describing in detail the results which have been obtained in exploration work on the leased premises.

Rental

For the rental during the exploration period of this lease, the Lessee shall pay annually to the Lessor a sum equivalent to ten cents (10¢) per acre of land held subject to this lease on the date such rental payment shall be due. Such payment shall be due annually in advance and shall operate to reimburse the Lessor for a similar amount paid in the form of a specific tax each year on state-owned lands.

Minimum Royalty

For the year commencing August 1, 19 53, and for each year thereafter during which this lease shall continue in effect, and regardless of whether Lessee shall conduct any mining or other operations on the premises, the Lessee shall pay to the Lessor an annual minimum royalty or rent for the premises hereby leased and the rights and privileges hereby granted, at the rate of Twenty-five Dollars ($25.00) per acre for acreage subject to this lease at the beginning of the year for which payment is made; provided, however, if a commercially minable body of ore has been discovered before the expiration of the exploratory period of this lease on any description of land subject to this lease, the Lessee shall, commencing with the payment of minimum royalty or rent for the year next ensuing after the discovery of such commercially minable body of ore, pay to the Lessor as minimum royalty or rent for such individual description of land the sum of Twenty-five Dollars ($25.00) per acre annually so long as it remains unsurrendered and subject to this lease. Such minimum royalty for any year to the extent not satisfied by royalty on ore shipped from any part or parts of the leased premises during the corresponding year, shall be paid on or before August 20, 1954, for the lease year directly preceding. ~~the month in which the payment is made.~~ If in any such year the Lessee shall ship ore from the leased premises, it shall be required to pay minimum royalty for such year only if and to the extent that royalties accruing on the ore shipped shall be less than the minimum royalty for such year. The Lessee shall have credit for any amount or amounts paid to the Lessor as for minimum royalty, and any and all such credits may be used and applied by the Lessee, so far as the same will go and be required to satisfy any amounts coming due under this lease to the Lessor for royalty in any subsequent year or years in excess of the current minimum royalty for the year of application.

Operations

All mines on said premises shall be opened, used and worked in such manner only as is usual and customary in skillful and proper mining operations of similar character when conducted by the proprietors or other prudent operators, and so as not to do, cause or permit any unnecessary and unusual permanent injury to the same or any improper interference or hindrance in the subsequent operation of said mine or mines; provided that, subject to the above requirements the Lessee may from time to time use and employ such methods of mining as to the whole or any part of the ore upon said property, or under any portion thereof, as it may desire or find most profitable and economical, or may, when it deems it necessary or desirable, discontinue operations entirely so long as it shall well and truly meet its obligations hereunder to pay taxes and minimum royalty, if any; and provided further that nothing contained in this lease shall require the Lessee to develop a separate shaft or shafts on the leased premises or any part thereof, or prevent said Lessee from developing mine or operations on the leased premises or any part thereof solely through or in connection with its operations on or in any adjoining or nearby property or properties as to it may seem most desirable, taking into account its developments and operations on any or all adjoining or nearby properties, or require the Lessee to mine, preserve or protect in its mining operations any ore which, under good mining practice, cannot be mined and shipped at a profit to the Lessee at the time encountered.

Taxes

The Lessee does hereby covenant, promise and agree that it will pay as and when the same shall become due and payable and save and indemnify the Lessor from and against all lawful public taxes and assessments, if any, whatsoever, whether general, specific or otherwise, which are legally assessed and levied upon or against the leased premises, or any part thereof, or on any ores or other product thereof, or any property or improvements that may be placed or made thereon by, or under, the Lessee, or any business or occupation that may be pursued or carried on by or under the Lessee upon the leased premises during the times this lease shall remain in effect with respect thereto, but Lessee shall not be liable for the payment of any taxes accruing by reason of the payment to or receipt by the Lessor of royalties or any other amounts herein provided to be paid by the Lessee, whether such taxes be designated as income taxes, royalty taxes, or otherwise. And it is agreed by the parties that upon the termination of this lease for any cause or with respect to any of said premises at a time other than at the end of any year, the Lessee shall be liable for the payment of only such proportion of any such taxes for such year on or with respect to the premises being surrendered, as the part of such year elapsed prior to the effective date of the termination shall bear to the entire year. Provided, however, that the Lessee shall always have the right to contest in the courts or otherwise, the validity of any taxes or assessments hereby required to be paid by it, in case the same shall be deemed unlawful, unjust, unequal or excessive, or to take such other steps or proceedings as may be necessary to secure a cancellation, reduction, readjustment or equalization thereof, before the Lessee shall be required to pay and discharge the same, or any part thereof; but, provided further, that the Lessee shall not permit or suffer the demised premises, or any part thereof, or any ore mined thereon, or any improvements or personal property thereon, to be sold at any time for such taxes or assessments.

Waste

The Lessee further agrees that it will not permit or suffer to be made any waste of the leased premises (except such waste as may be necessarily or customarily incidental to the conduct of the mining operations herein contemplated or the full and proper exercise of any of the rights and privileges hereby granted): that at the end of said term, or the termination of this lease or demise, in whole or in part, whether by forfeiture, expiration of time, surrender by the Lessee or otherwise, it will peaceably surrender the leased premises or the governmental descriptions affected thereby, as the case may be, to the Lessor with all caves and openings properly fenced, filled or protected as may be required by any laws or proper regulations of any duly constituted governmental authority then in effect and with all stopes, shafts and underground openings that may be made by the Lessee thereon, in good order and condition, ordinary wear and tear in use and deterioration from and damage by the elements excepted.

Removal

It is mutually agreed that the Lessee shall have ninety (90) days after any such termination or surrender in which to remove all engines, tools, machinery, railway tracks, shaft houses, buildings, dwellings, and structures and all other property of every nature and description erected, placed or situated upon the premises as to which this lease is being terminated or surrendered, except any and all

supports placed in any shafts, drifts, or openings thereon or any timber or frame work necessary to the use and maintenance of shafts or approaches to mines or tramways within mines, none of which shall be removed or destroyed by the Lessee; provided, always, however, that none of said property may be removed by the Lessee unless all payments of taxes, if any, (except taxes not then due and payable, which must and will be paid within thirty (30) days after they become due and payable), royalties then due and other dues shall have been made and all other covenants, agreements and conditions hereof obligatory upon the Lessee shall have been properly and faithfully observed and performed. Upon the failure of the Lessee to remove any such permitted property within said period of ninety (90) days, the same shall belong to and become the absolute property of the Lessor.

Inspection by Lessor

It is mutually agreed that said Lessor, its agents and servants, may at all reasonable times, subject to any security rules and regulations imposed by the United States Atomic Energy Commission, enter upon the demised premises, or any part thereof, peaceable, and view the same, and take all reasonable means to ascertain the condition thereof, and the kind, qualities and quantities of ore therein or removed therefrom, not thereby unreasonably or unnecessarily hindering or interrupting the proper business or operations of the Lessee; provided, however, that said Lessor agrees to save the Lessee harmless from all claims for damages arising out of any death or personal injuries sustained by any such agents or servants of the Lessor while in or upon said premises as herein permitted, unless the death or injury arises as the result of negligence of the Lessee.

Default

It is mutually agreed that if the royalty hereby reserved, or the minimum royalty or rent herein agreed to be paid by the Lessee, or any part of either thereof, be and remain unpaid after the days and times above specified, or if the Lessee shall fail to keep any of the other conditions herein expressed to be kept, performed or observed by the Lessee, and if any or either such failure shall continue for sixty (60) days after written notice from the Lessor specifying any such default, neglect or failure, such notice to be given in the manner hereinafter provided, then and from thence forward it shall be lawful for the Lessor, with or without any process of law or judgment, to enter upon and take possession of the demised land or any part thereof, in the name of the whole, and the said land together with all ores, machinery, fixtures, improvements and personal property thereon to possess and hold, and to exclude forcibly if necessary and without being guilty of any trespass or other wrongful act, the Lessee and any and all persons claiming under it, and at the election of the Lessor to declare this lease terminated and the rights of the Lessee hereunder forfeited; and any such re-entry on the part of the Lessor shall be without prejudice to any other remedy or proceedings which the Lessor might have in law, equity or otherwise by reason of any breach of any covenants, promise or agreement of the Lessee herein contained, or for the recovery of possession of said premises, and provided that if the Lessee shall deny the failure alleged by the Lessor and shall demand arbitration thereof in the manner hereinafter provided, the period required for the hearing and determination of such matter by the arbitrators shall not be deemed a part of said sixty (60) days hereinbefore referred to, and if the contention of the Lessor be sustained by the arbritrators, the Lessee shall have sixty (60) days after the filing of the decision by the arbitrators in which to correct the failure complained of.

Termination of Lease or Surrender of Rights by Lessee

It is hereby further covenanted, agreed and understood by and between the said parties hereto, that the Lessee may:

(a) At any time terminate the foregoing lease and demise; and/or

(b) At any time and from time to time separately surrender the rights, privileges and easements hereinabove granted, leased and demised to it, and terminate its obligations hereunder, insofar as the same pertains to any one or more designated governmental descriptions which are part of the leased premises:

by giving the Lessor, or those having its estate in the premises, written notice of its intention so to do at least sixty (60) days before such termination or surrender, as the case may be, such notice to be given in the manner herein provided; and in each such case this lease shall terminate, or the rights and obligations of the

Lessee with respect to the designated governmental descriptions surrendered shall terminate as the case may be, sixty (60) days after the giving of such notice, provided that all of the covenants, agreements and conditions hereof obligatory upon the Lessee, including payment of all minimum royalty, royalties and other sums that may have accrued and become payable hereunder (but not including taxes, if any, or other amounts not then due and payable, which must and will be paid within thirty (30) days after they become due and payable), shall have been properly kept and performed by the Lessee; and the Lessee must and will upon any such termination or surrender, as the case may be, and upon the request therefor by the Lessor, forthwith execute and record in any public office where this instrument may have been filed and recorded, a formal release and discharge, evidencing such termination or surrender, as the case may be.

Lessor's Lien

That the Lessor shall at all times have, possess, and hold a lien upon all ores mined but not shipped from the leased premises, and upon all machinery, personal property and improvements placed upon said premises by the Lessee, as security for any unpaid balance of money due hereunder, and as security for the performance by the Lessee of each and all of the covenants and conditions hereof obligatory upon the Lessee, which lien may be enforced against any such property in like manner as liens conferred by chattel mortgages, or by any other lien security, are or may be entitled to be enforced under the laws of Michigan. Nothing herein contained, however, is intended or shall be construed to prevent the sale and removal of said ore or concentrated products in the usual course of business, nor to prevent the removal of tools, machinery, equipment or any other property at any time when said Lessee shall not be in default; and the above referred to lien shall not, in case of sales of ore or concentrated products to third parties, be deemed to follow the same as against such third parties.

Arbitration

In case any disagreement or controversy shall arise between the parties hereto relative to the observance or fulfillment or construction of the terms and obligations hereof, then such controversy or disagreement shall be determined by arbitration. Either party may within a reasonable time after such disagreement arises demand arbitration thereof and the party making such demand shall in writing specify the matter to be submitted to arbitration and at the same time choose and nominate some disinterested competent person to act as an arbitrator; thereupon within ten (10) days after receipt of such written notice the other party to this lease shall in writing choose and nominate a disinterested and competent arbitrator and the two arbitrators so chosen shall promptly select a third arbitrator, giving written notice to both parties of the choice so made and fixing a place and time for meeting not later than thirty (30) days thereafter, at which both parties may appear and be heard touching such controversy. The decision of said arbitrators shall be made in writing within thirty (30) days after the completion of hearings thereon, and when signed by a majority of them shall be final and conclusive upon both parties, and the award so made shall be forthwith complied with. In case the notified party shall neglect or refuse to choose and nominate an arbitrator within the time herein specified, or in case the two chosen by either method herein provided shall fail to agree upon a third arbitrator, then such arbitrator shall in each case, upon application of either party, be named by the person (or any one of the persons) who may then be holding the office of judge of the United States District Court in and for the district in which the mine is located, or the person holding an office which corresponds to such office as now extant if it shall then have been abolished. The expenses of any such arbitration, including reasonable compensation for the arbitrators, shall be paid by the party against which the award shall be made or as otherwise directed by the arbitrators.

Addresses

For the purposes hereof, the address of the Lessor shall be Department of Conservation, State Office Building, Lansing, Michigan, or such other place as it may have last designated in writing to the Lessee, and the address of the Lessee shall be Owosso, Michigan, or such other place as it shall have last designated in writing to the Lessor.

Routine or regular periodical reports, statements and payments hereunder may be sent by regular mail so addressed; and, if so addressed and mailed in due season, then if any of the same shall not be received when due, the addressee will notify the addressor of such failure of receipt and give the addressor a reasonable

time to follow up and secure the delivery of the statement, report or payment, or a duplicate thereof, before claiming any default on/account of such failure of delivery. But as to any formal notices of surrender, cancellation, default or termination, the same shall be delivered to the party notified either personally or by registered mail to be effective hereunder.

Successors and Assigns

It is further covenanted, agreed and understood between the parties hereto, that this lease and the covenants, agreements and conditions herein contained shall run with the land, and shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto, respectively as if mentioned throughout by words of appropriate designation.

Bond

The Lessee has delivered to the Lessor a bond, with surety satisfactory to the Lessor, in the amount of One Thousand Dollars ($1,000.00) for the performance by the Lessee of the covenants and agreements of the Lessee contained in this lease, for the duration of the exploratory period of this lease. The Lessee further agrees that at such time as mining operations are commenced under the terms and conditions of this lease, the Lessee shall deliver to the Lessor a bond, with surety satisfactory to the Lessor, in the amount of Ten Thousand Dollars ($10,000.00) for the performance by the Lessee of the covenants and agreements of the Lessee contained in this lease pertaining to mining operations. The Lessee, its successors and assigns, will, at all times while this lease continues in effect, maintain such or a similar bond with reasonable surety to the Lessor in full force and effect; and, in case of any assignment of this lease by the Lessee, the same shall not be or become effective to release the assignor from liabilities thereafter accruing hereunder unless and until the assignee shall similarly furnish and confirm to the Lessor such or a similar bond for the performance of the Lessee's covenants and agreements hereunder by such assignee.

Federal Requirements

This lease shall be subject to all requirements that the government of the United States may impose for the purpose of maintaining national security, including loyalty investigations and including compliance with the provisions of Public Law 585 of the 79th Congress of the United States, commonly known as the Atomic Energy Act of 1946, and all amendments thereto, and of all subsequent Act or Acts which may be enacted for the purpose of maintaining national security; and where there is any inconsistency or conflict between the provisions and requirements of this lease and the federal requirements, the federal requirements shall govern. Failure of the Lessee to comply with the aforesaid requirements and laws of the United States for the handling of source materials, shall constitute grounds for the cancellation of this lease.

IN WITNESS WHEREOF, the said Lessor, by its Director, has hereunto affixed its name and the seal of the said department, by virtue of a resolution passed by the Department of Conservation on June 9, 19 50, and with due approval of the State Administrative Board duly given on July 5, 19 50, and the said Lessee has affixed its name and seal as of the day and year first above written.

Witnesses to the signatures of Director and Secretary:

Levis U. Sibley

J. D. Stephansky

DEPARTMENT OF CONSERVATION FOR THE STATE OF MICHIGAN

P. H. Hoffmaster, Director

Wayland Osgood, Secretary

Witnesses to the signature of Lessee:

Alice Lecureux

Thad D. Isham

James E. Leitch

STATE OF MICHIGAN)
) ss.
County of Ingham)

On this 27th day of July, 19 50, personally appeared before me, a Notary Public in and for the County of Ingham, P. J. Hoffmaster, Director, and Wayland Osgood, Secretary, of the Department of Conservation, personally known to me to be the same persons who executed the foregoing instrument, and who acknowledged the same to be their free act and deed and the free act and deed of the Department of Conservation, in whose behalf they act, and for the purpose in said instrument set forth.

Joseph D. Stephansky
Joseph D. Stephansky
Notary Public, Ingham County,
Michigan

My Commission Expires: Jan.12,1954

STATE OF Michigan)
) ss.
County of Shiawassee)

Before me, the undersigned, a Notary Public in and for said county and state on this 21 day of July, 1950, personally appeared Thad D. Solam and James E. Letch, to me personally known, who being duly sworn, did say that _____ ~~and~~ _____ ~~of the corporation named in the foregoing instrument and acknowledges to me that~~ they executed the same as their free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the purposes therein mentioned and set forth, and that the seal affixed to said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors.

Alice Hosking
Notary Public, Shiawassee

My Commission Expires: 10/24/52

I HEREBY CERTIFY, That the within lease, insofar as it pertains to lands held in fee simple by the State and listed in Schedule A attached, was approved at a meeting of the State Administrative Board held on July 5, 1950.

August 2, 19 50.

Robert F. Steadman
Secretary, State Administrative Board
Robert F. Steadman

LEITCH MOTOR SALES

MICHIGAN'S LARGEST AUTOMOBILE AUCTION

Owosso Michigan Every Thursday 12:00 Noon

TELEPHONES:
OFFICE 582
WED. and THURS. 2170

OFFICE:
1450 EAST MAIN STREET
OWOSSO, MICHIGAN

"Get our Used Car Dealers Price Barometer published weekly"

December 24, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
1952

Mr. Ernest Wm. Ellis
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-3697 (Uranium)
Dickinson County, Michigan

Dear Mr. Ellis:

This is in reference to your letter of December 19, 1952, in which your office referred to our application and our future intentions.

It is our desire to continue as per application. We have had some delays in getting out sketch maps of our recent exploratory work. However, we will have the information and maps in the mail to your office in the very near future.

We presume that the information we are extending to you here will be sufficient to keep our application alive until you receive the above mentioned maps and data as we intend to follow through with the application to a successful conclusion.

Very truly yours,

L & I URANIUM DEVELOPMENT CO.

James E. Leitch

James E. Leitch

JEL/al
cc:

12/30/52

Mr. Schmidt

On the basis of this letter, I am disrgarding the 30-day notice to close this file.

Mrs. Ault

700 FILE COPY
SURNAME:

Schmidt
Ellis
Mathews

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

DEC 19 1952

Mr. James E. Leitch
L & I Uranium Development Co.
1418 E. Main Street
Owosso, Michigan

Re: Docket No. DMEA-2697 (Uranium)
Dickinson County, Michigan

Dear Mr. Leitch:

A review of your application of September 10, 1952, for an exploration contract in the amount of $48,541.50, reveals that a letter dated October 8, 1952, requested additional information necessary to process your application.

Inasmuch as we have received no reply, we assume that you no longer desire to proceed with the application. We wish to cooperate with you in the matter of allowing ample time, but if the needed data has not been received by January 19, 1953, we will then consider the docket closed.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals
Division

FSSchmidt/gla
12/17/52
cc to: Adm. Reading File
Docket
Messrs. H. D. Keiser, Rm. 3647
A. P. Butler, Jr., Rm. 3206 GSA
DMEA Field Team, Region V (2)

S.H.
12-19-52

10/12/52

wait for answer from
Applicant Dutch

12/18/52
still waiting write them

Sch

700

FILE COPY
SURNAME:

Schmidt
Ellis

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

Mr. James E. Leitch
L & I Uranium Development Co.
1418 E. Main Street
Owosso, Michigan

OCT 1952

Re: Docket No. DMEA-2697 (Uranium)
Dickinson County, Michigan

Dear Mr. Leitch:

This acknowledges receipt of the captioned application dated September 10, 1952. In accordance with our telephone conversation of October 7, we are unable to process this application due to the lack of necessary information.

A most important part of the application is covered by questions 4 and 5 of Form MF-103, which should be answered fully. They require the submission of data on which the merits of your application can be analyzed. Whether this application can be processed any further depends largely on a satisfactory presentation of the facts that are to justify Government participation in this exploration project.

It is impossible to determine from this application and its maps what work is to be done and its location, and whether the proposed work is adapted to explore the mineral showings. Furthermore, you should submit what evidence you have that there is sufficient uranium mineralization to justify exploration.

The subject property has been leased from the State of Michigan. No copy of the lease accompanies the application as required, though it is so stated in answer to question 3-f in the application.

When we are provided with the desired information in original and three copies, they will be attached as supplements to your present application on Form MF-103. We will then proceed with the processing of the application.

Sincerely yours,

Signed 10-8-52
cc

Ernest Wm. Ellis, Chief
Rare and Misc. Metals Division

FSommerSchmidt/gla
10-7-52
cc to: Adm. Reading File
Docket
Messrs. H. D. Keiser, Rm. 1347
A. P. Butler, Jr.
Rm. 3206 GSA
Ellis
Schmidt
DM,A Field Team, Region V (2)

7- 10,000 Sitka Angel
Shaft 40'

10/9/52

Report by Hosted that Everhart who had examined the property reports the presence of pitchblende and that they think some work should be done costing about from 7,000 to 10,000000 like sinking a shallow shaft following the pitchblende I suggested that he locate some point where the pitchblende was, so that it could be followed I dont trust these two applicants to find the right spot.

This Everhart is the man referred to in the application.

10/10

Hosted brought the A.E.C. Report on this property by Everhart.

Note that applicant Sutch has rec'd one copy of this report

DMEA 2697 10/7/52 uranium

~~Tone conversation with Leitch, who wanted to know how we were getting along. He was informed about the letter being sent to him, and also instructed him as to the deficiencies in his application. He seemed to understand what was wanted, and also said he saw the necessity of our getting the information. I told him that we would get whatever information we could from A.E.C. concerning his land as he asked us to do.~~

10/8/52

Conference with Hosted who is going to get the information from their maps and available data, and also talk to Mr. Jesse Johnson of A.E.C. manager of raw materialz and also Mr. Everhart of Raw Materials New York/

I am working on the premise that these applicants are very poorly informed about mining matters, that they have submitted a very poor ad incomplete application, but that this may have nothing to do with their having a good property.

the report from Hosted will help us decide whether this application is worth going ahead with.

Meantime a letter has been written to Leitch asking for proper filling out of application form which he said he would do.

Status 10/8/52

Get report from Hosted

Get data completing application form 103

L & I Uranium Development Co DMEA 2697

Informal notes on application by Schmidt for files

Application incomplete. Cost of doing the work is carefully itemized but no description of what work is to be done. There is no cost allotted for diamond drilling. Hence work is probably shaft or tunnel.

There is no map of the property. The only description is sec 12 and 13 T 42 N r 39 E Is the property these two sections.

The property is a lease from the State of Michigan

No lease included in aplication though question 3 d asks for and it is answered " enclosed copy ".

Question 4 and 5 are left unanswered especially as to the points that enable one to pass on the merits of the application. No geology or assays or geiger counter data or map showing relation of the geological occureence to the property nor how the work is to beneficiate the property and explore the showings. The anomalies are shown in the dot formation and the so called claim X2 and X 3 is in Laurentian. What does X2 claim location mean.

Map entitled Geological maps etc of Dickinson County Michigan is marked Official Uze only. How did applicant get this map for this purpose. It does not show the formation represented by the symbol of dots. which is important.

What does" claim location" mean.

Applicant should complete questionnaire

Inquiry should be made of Hosted et al as to what they know about this country and possibly get the data referred to in letter by Leitch 9/12/52 from Jesse Johnson of A.E.C.

9/25/52 jim

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

September 24, 1952

Memorandum

To: Ernest William Ellis, DMEA Member,
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member,
Uranium Commodity Committee

Subject: DMEA Docket 2697, James E. Leitch & Thad D. Isham,
1418 E. Main Street, Owosso, Michigan.

I have reviewed the application in the subject docket and discussed it with Arthur P. Butler, Jr., Geological Survey Member.

It is recommended that the application be returned to the applicant for completion, particularly as to items 4c and 5b specified on form MF 103.

H. D. Keiser

H. D. Keiser

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 24 1952

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

September 24, 1952

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H. D. Keiser

Enclosure

STANDARD FORM NO. 64

9/29/52 pmj

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: September 19, 1952

FROM : A. P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: DMEA Docket 2697 (Uranium) James E. Leitch & Thas D. Isham 1418 E. Main Street, Owosso, Michigan, Applicant: L. & I. Uranium Development Company. Properties in Section 12, 13 T.42N., R29W., Felch township, Dickinson county, Michigan.

The application as identified in the subject above for DMEA exploration assistance is deficient in the respects listed below:

1. The nature of the purported uranium occurrence is not described.

2. The map submitted with the application is merely an index of the general position of the claims and does not show the kind, distribution, or purported mineralized occurrence.

3. The nature of the work intended, and the relation of the proposed work to geologic features and to possible mineralized ground, are not shown.

4. No information, i.e., analysis of location of samples is given that would indicate whether or not there was sufficient possibility of finding uranium ore to warrant any exploration.

I recommend that the application be returned to the applicants with a request that they submit a specific proposal indicating the kind of exploration to be carried out, and a sketch in adequate detail, to show the relation of the proposed type, or types, of exploration to the geologic features and possible positions of ore that they intend to explore.

Arthur P. Butler, Jr.

Arthur P. Butler, Jr.

Copy to: E. Wm. Ellis

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

September 19, 1952

E. Wm. Ellis, DMEA Member, Uranium Commodity Committee
A. P. Butler, Jr., USGS Member, Uranium Commodity Committee

DMEA Docket 2697 (Uranium) James E. Leitch & Thas D. Isham 1418 E. Main Street, Owosso, Michigan, Applicant: L. & I. Uranium Development Company. Properties in Section 12, 13 T.42N., R29W., Felch township, Dickinson county, Michigan.

Department of the Interior
Defense Minerals Administration
RECEIVED
SEP 23 1952

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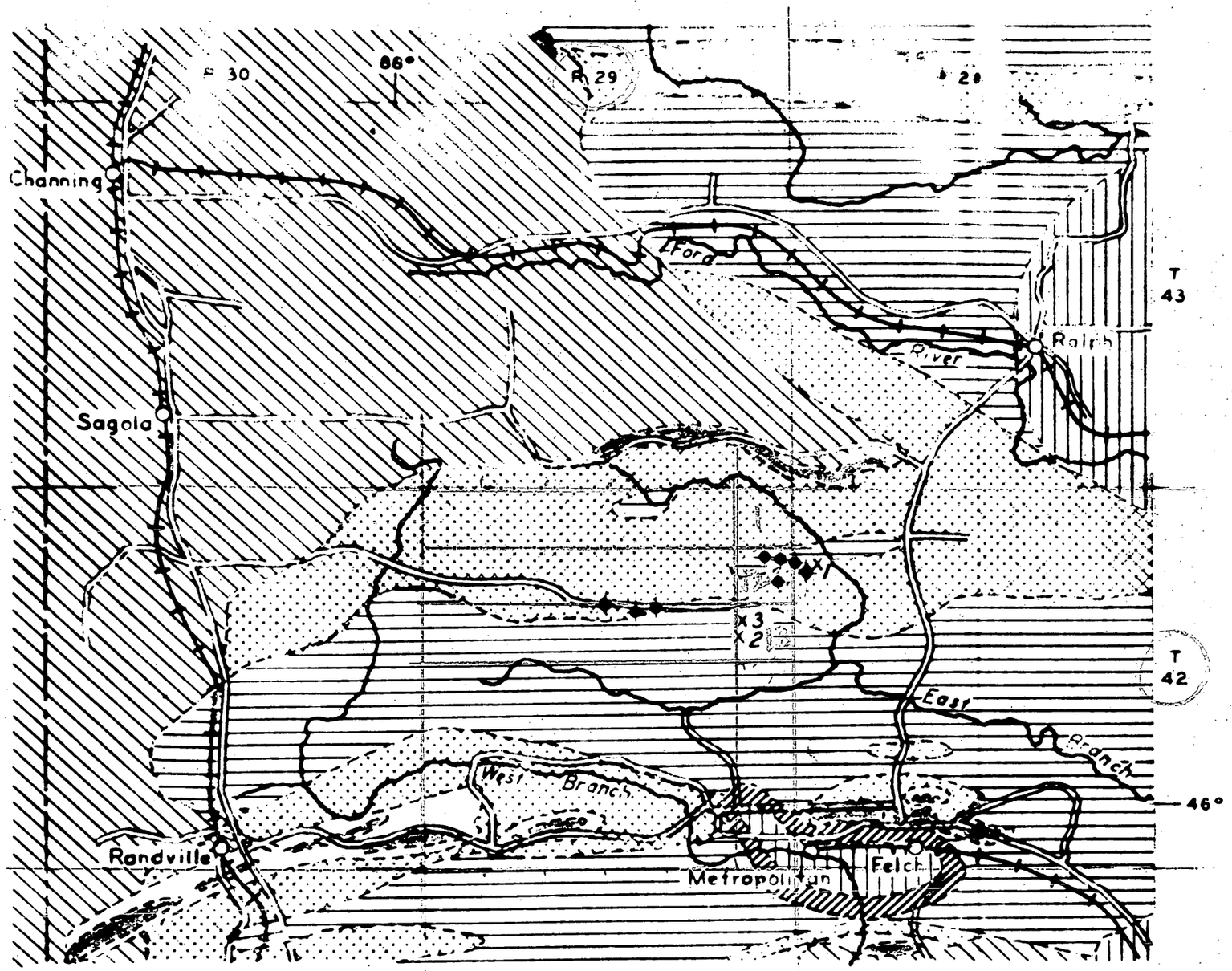
Arthur P. Butler, Jr.

Copy to: E. Wm. Ellis

FIG. 1

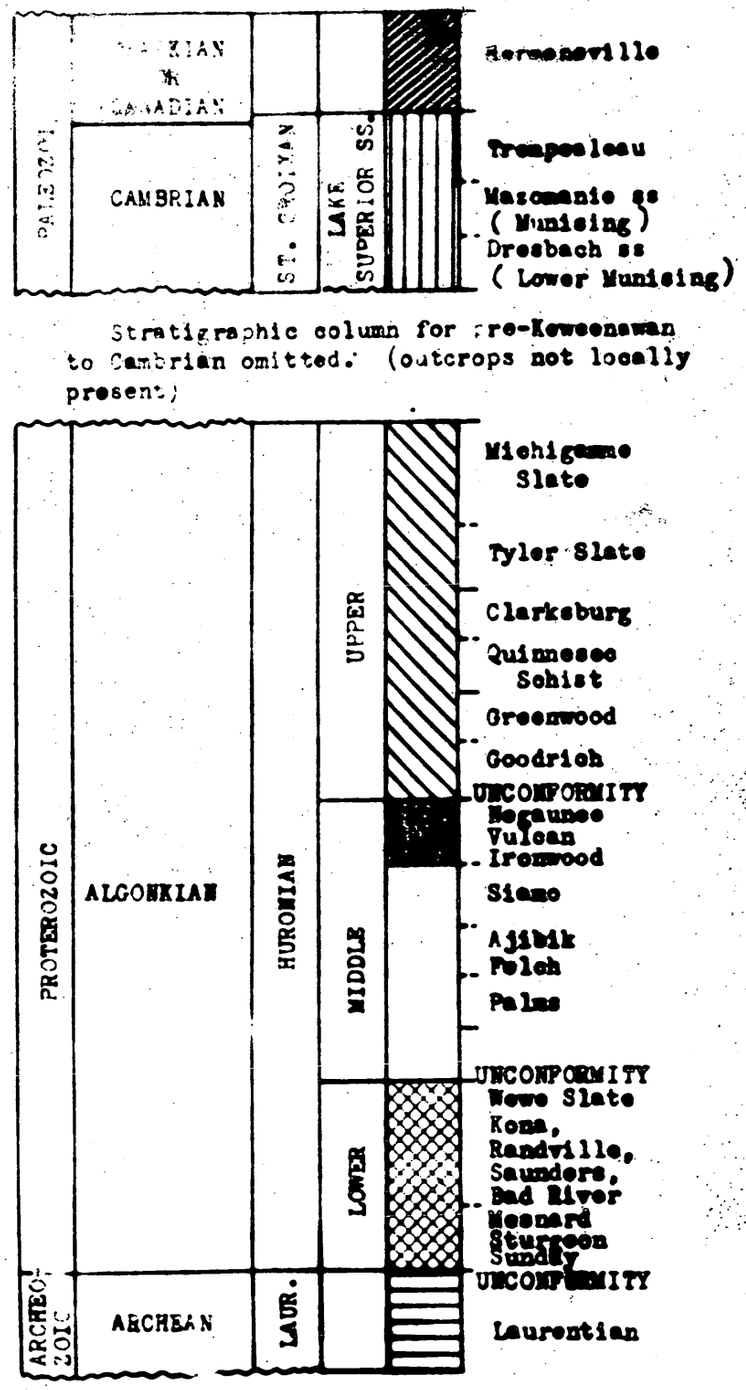


GEOLOGICAL MAP & REPORTED URANIUM OCCURRENCES
DICKINSON COUNTY, MICHIGAN

1 0 1 2 3 4 5 MILES

✦ ANOMALIES SHOWN ON U.S.G.S. "REDBALL" MAP

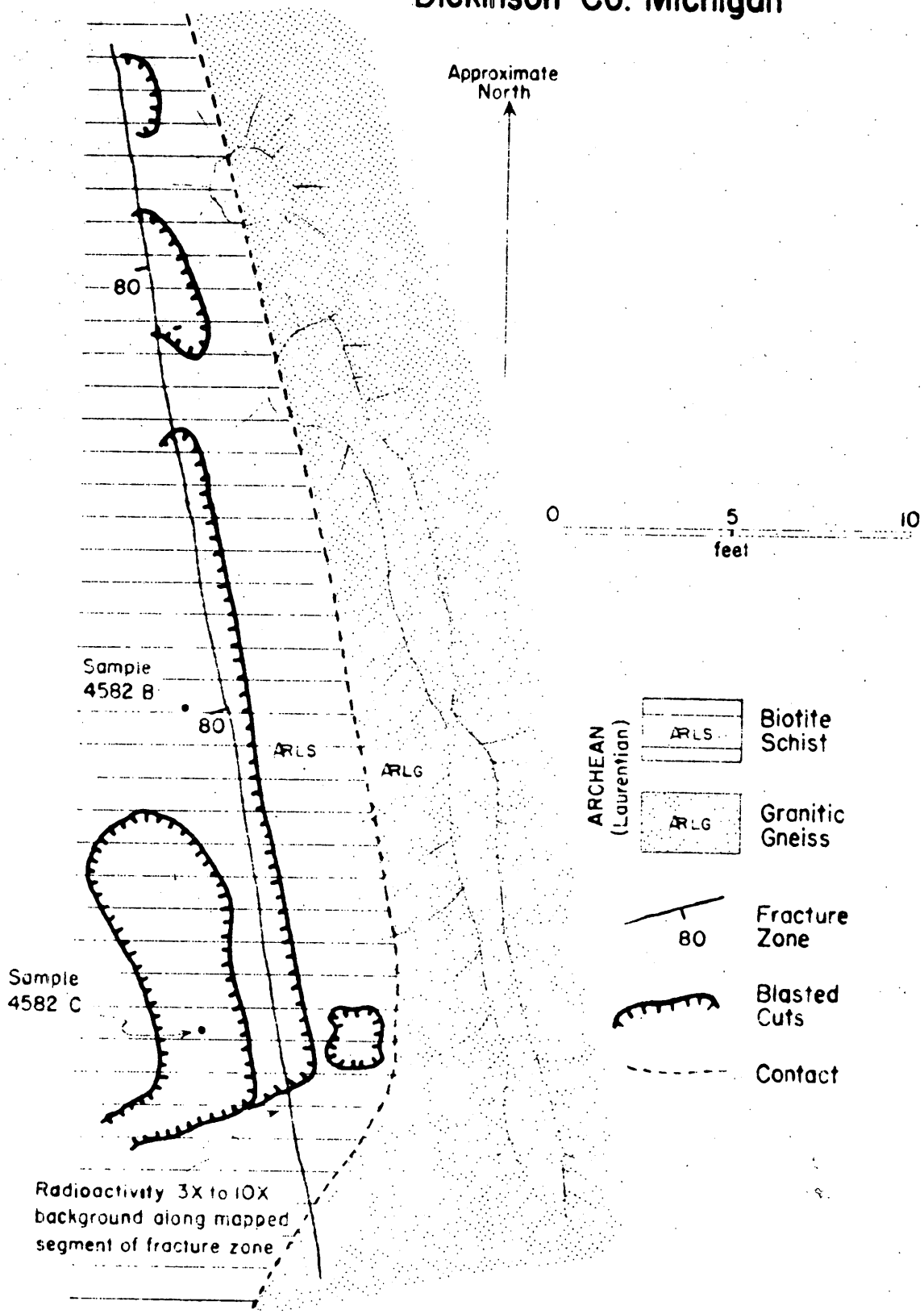
X_2 CLAIM LOCATION



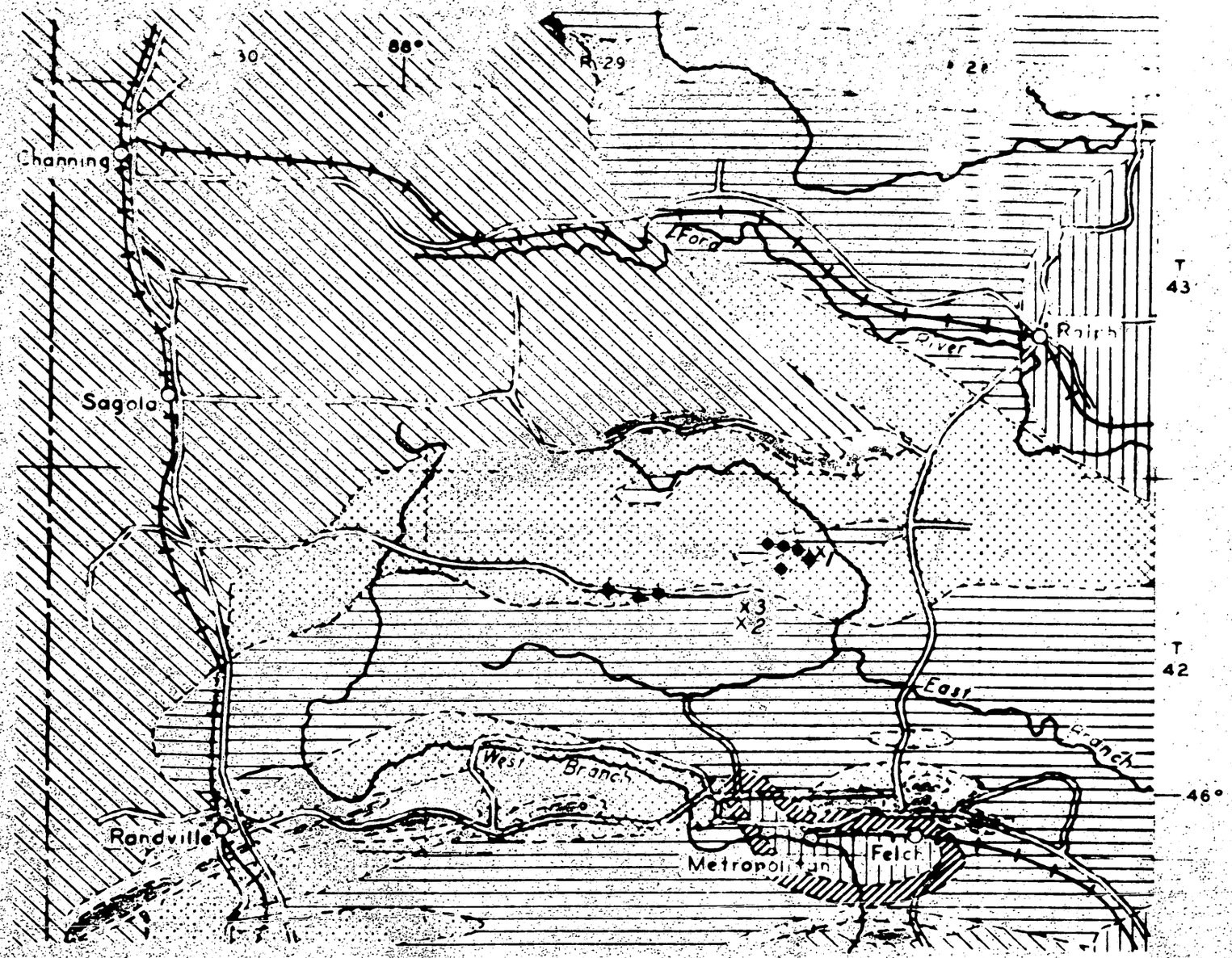
USAEC DRM, RMO 924, JAN. 1951 AUG. 1952

Fig. 2

LEITCH ISHAM CLAIM No. 2
Section 13, T.42.N., R.29.W.
Dickinson Co. Michigan



Sketch by
D. L. EVERHART

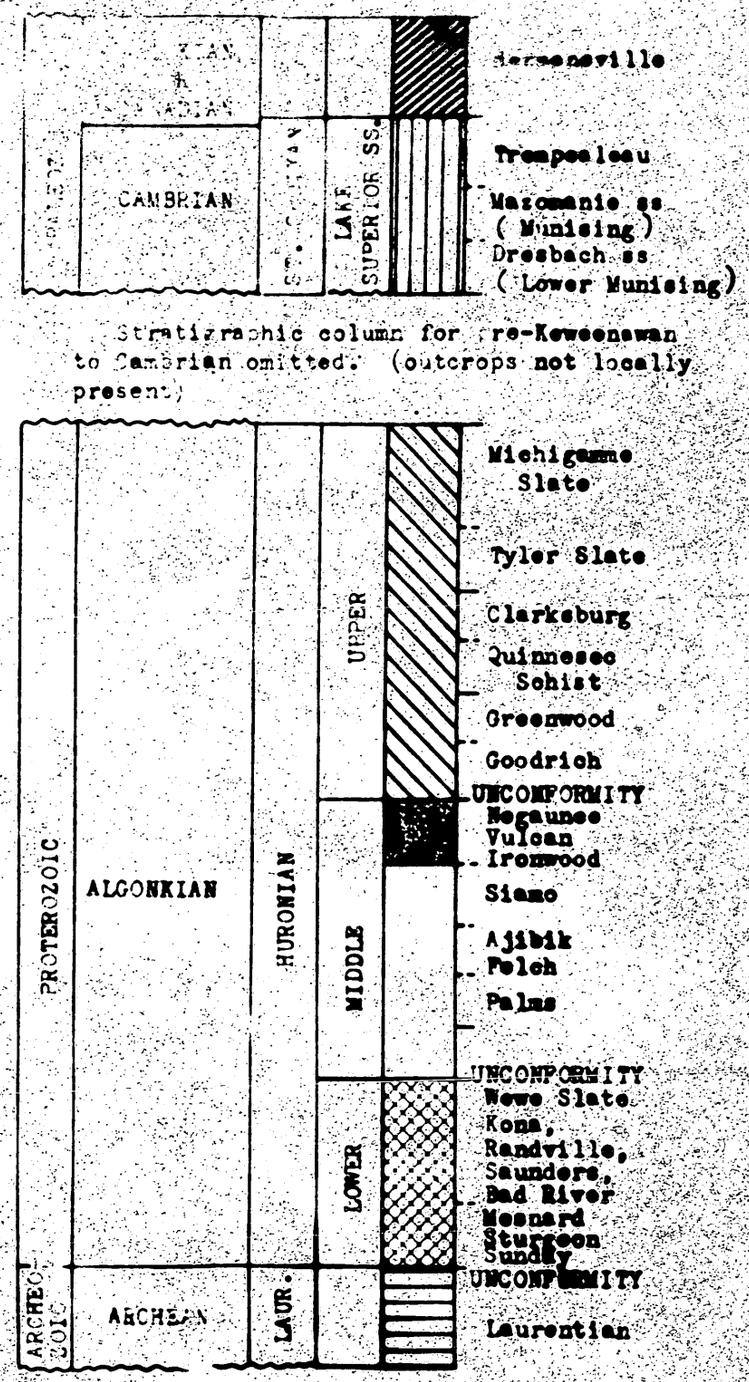


GEOLOGICAL MAP & REPORTED URANIUM OCCURRENCES
DICKINSON COUNTY, MICHIGAN

1 0 1 2 3 4 5 MILES

✦ ANOMALIES SHOWN ON U.S.G.S. "REDBALL" MAP X_2 CLAIM LOCATION

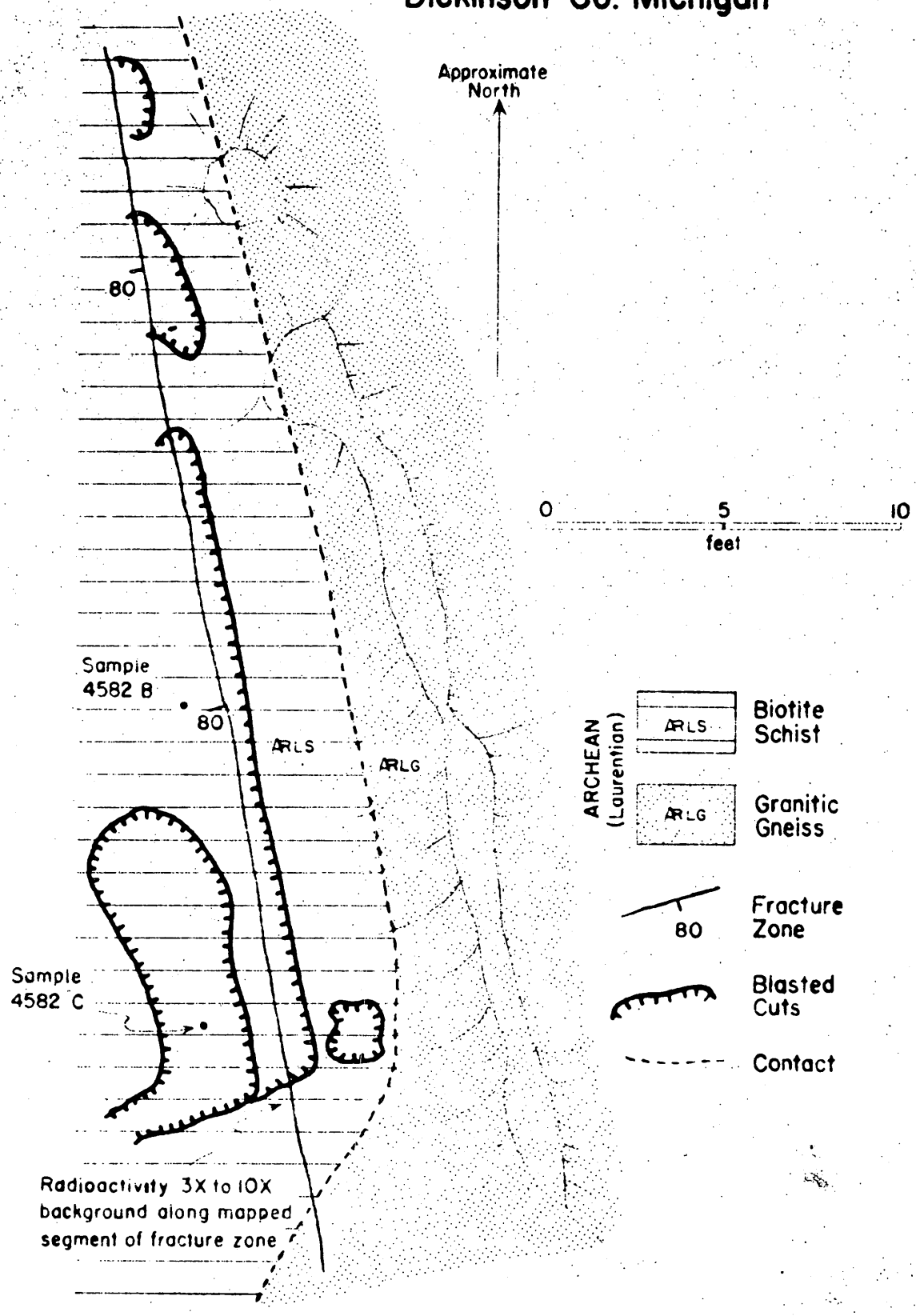
FIG. 1



USAEC DRM, RMO 934, AUG. 1952 JAN. 1951

Fig. 2

LEITCH ISHAM CLAIM No. 2
Section 13, T.42.N., R.29.W.
Dickinson Co. Michigan



Sketch by
D. L. EVERHART

September 16, 1952

Mr. James E. Leitch
L. & I. Uranium Development Co.
1418 E. Main Street
Owosso, Michigan

Subject: DMEA-2697
Re: Exploration Assistance

My dear Mr. Leitch:

The receipt of your application dated September 10, 1952 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2697 and referred to the Rare & Miscellaneous Metals Division.

Kindly refer to DMEA-2697 in any future correspondence relating to your application.

Sincerely yours,

R E ADAMS

Robert E. Adams
Chief, Operation's Control
and Statistics Division

25451

LEITCH MOTOR SALES

MICHIGAN'S LARGEST AUTOMOBILE AUCTION

Owosso Michigan Every Thursday 12:00 Noon

TELEPHONES:
OFFICE 582
WED. and THURS. 2170

OFFICE:
1450 EAST MAIN STREET
OWOSSO, MICHIGAN

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 15 1952

"Get our Used Car Dealers Price Barometer published weekly"

Dmea-2687

September 12,1952

Defense Materials Exploration Adminstration
U.S.Department of Interior
Washington 25,D.C.

Gentlemen:

Enclosed are the supplementary forms required for a D.M.E.A.grant. The photostatic copies are enclosed for imformation as requested in the application from your office and also requesting the chemical analysis of samples submitted. Mr. Jesse C.Johnson has copies of these reports from Mr. Everhart of Raw Materials, New York,N.Y.

If it is necessary for you to have these reports we are sure that Mr.Jesse C.Johnson of A.E.C., manager of Raw Materials,willcooperate with you on the reports that he now has in his possession from Mr. Everhart.

Thanking you for an early reply.

Very truly yours,

James E. Leitch

James E.Leitch

JEL:feb

MF-103
(Revised April 1952)

Rec'd 9/15

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 15 1952

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

Not to be filled in by applicant

Docket No. Dmea-2697
Metal or Mineral
Date Received 9-15-52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: James E.Leitch & Thad D.Isham
1418 E.Main St. Owosso,Michigan
L & I Uranium Development Co.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Sections 12,13 T.42N.,R29W., Felch township,Dickinson county,Michigan

(*b*) State any mine name by which the property is known. none at present time

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise lessee

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

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

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Right of applicant is based on lease from state of Michigan

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

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

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

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

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

5. *The exploration project.*—(*a*) Sta[illegible]he mineral or minerals for which you wish t[illegible]plore Uranium

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

(*c*) The work will start within 10 days and be completed within 6 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

☑ Money ☑ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated Sept 10, 1952

James E. Leitch
(Applicant)

By Thad D. Gilam

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

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

6. ESTIMATE OF COSTS:

	PER WEEK	
(a) Independent contracts----------	None	
(b) Labor, supervision and consultants:		
Consulting mining engineer-------	$125.00	
Labor----------	480.00	
1 Drill and Blasting Superintendent	100.00	
1 Foreman----------	100.00	
1 Bookkeeper----------	75.00	
TOTAL FOR TWENTY-SIX WEEKS----------	$880.00	$22,880.00
(c) OPERATING MATERIALS AND SUPPLIES:		
Shovels, picks, sledges, pry-bar, hand hammers, gloves, safety shoes, helmets and goggles----	500.00	
Water pump and piping from spring-	300.00	
Gasoline motor power, gasoline and motor oil----------	450.00	
Fuel Oil----------	125.00	
TOTAL----------		1,375.00
(d) OPERATING EQUIPMENT:		
1. 1 Big Six Ford Dump Truck with Hydraulic box----------	$3600.00	
2. Rental of Bulldozer and wages of operator-----$450.00 per week----------	11700.00	
3. Rental of drilling equipment, including compressor and hose - $50.00 per week-------	1300.00	
4. Dynamite caps, wire and batteries, and dynamite------	250.00	
5. Bench type power saw, skill saw and gasoline motor to operate the same, and miscellaneous carpenter tools, owned by applicant and to be rented for a period of expiration----------	100.00	
6. 1 New 4-wheel drive Willys one-ton truck with hydraulic snow plow, owned by applicant and to be rented for a period of expiration----------	1500.00	
7. Miscellaneous tools, owned by applicant and to be rented for a period of expiration----	50.00	
TOTAL----------		18,500.00
(e) REHABILITATION AND REPAIRS----------		None
(f) NEW BUILDING, IMPROVEMENTS AND INSTALLATION:		
1. Office building, including space for bookkeeper, tool shed and lunch room----------	1,500.00	
2. Outhouse----------	75.00	
3. 2 Oil Heaters----------	200.00	
4. Benches and eating table for employees----------	100.00	
TOTAL----------		1,875.00

g. MISCELLANEOUS:

1. Repairs and maintenance of operating equipment	$1,000.00	
2. Accounting	200.00	
3. Workmens' Compensation	200.00	
4. Payroll taxes	200.00	
TOTAL		$ 1,600.00

h. CONTINGENCIES: 2,311.50

TOTAL $ 48,541.50

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

SEP 15 1952

SEP 16 1952 4 p.m.

SEP 16 1952

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

Not to be filled in by applicant

Docket No. Dmea-2697
Metal or Mineral
Date Received 9-15-52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: James E.Leitch & Thad D.Isham
1418 E.Main St. Owosso,Michigan (business address)
L & I Uranium Development Co.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Sections 12,13 T.42N.,R29W., Felch township.Dickinson county,Michigan

(*b*) State any mine name by which the property is known. none at present

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise lessee

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

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

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Right of applicant is based on lease from state of Michigan

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

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

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

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

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

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore ...um.....

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

(*c*) The work will start within ....10.... days and be completed within .....6.. months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated ....September 10...., 195.2

James E. Leitch
(Applicant)

By Thad D. Isham

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

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

6. ESTIMATE OF COSTS:

	PER WEEK	
(a) Independent contracts----------	None	
(b) Labor, supervision and consultants:		
Consulting mining engineer-------	$125.00	
Labor----------	480.00	
1 Drill and Blasting Superintendent	100.00	
1 Foreman----------	100.00	
1 Bookkeeper----------	75.00	
	$880.00	
TOTAL FOR TWENTY-SIX WEEKS----------		$22,880.00
(c) OPERATING MATERIALS AND SUPPLIES:		
Shovels, picks, sledges, pry-bar, hand hammers, gloves, safety shoes, helmets and goggles----	500.00	
Water pump and piping from spring-	300.00	
Gasoline motor power, gasoline and motor oil----------	450.00	
Fuel Oil----------	125.00	
TOTAL----------		1,375.00
(d) OPERATING EQUIPMENT:		
1. 1 Big Six Ford Dump Truck with Hydraulic box----------	$3600.00	
2. Rental of Bulldozer and wages of operator-----$450.00 per week----------	11700.00	
3. Rental of drilling equipment, including compressor and hose - $50.00 per week-------	1300.00	
4. Dynamite caps, wire and batteries, and dynamite------	250.00	
5. Bench type power saw, skill saw and gasoline motor to operate the same, and miscellaneous carpenter tools, owned by applicant and to be rented for a period of expiration----------	100.00	
6. 1 New 4-wheel drive Willys one-ton truck with hydraulic snow plow, owned by applicant and to be rented for a period of expiration----------	1500.00	
7. Miscellaneous tools, owned by applicant and to be rented for a period of expiration----	50.00	
TOTAL----------		18,500.00
(e) REHABILITATION AND REPAIRS----------		None
(f) NEW BUILDING, IMPROVEMENTS AND INSTALLATION:		
1. Office building, including space for bookkeeper, tool shed and lunch room----------	1,500.00	
2. Outhouse----------	75.00	
3. 2 Oil Heaters----------	200.00	
4. Benches and eating table for employees----------	100.00	
TOTAL----------		1,875.00

g. MISCELLANEOUS:

1.	Repairs and maintenance of operating equipment	$1,000.00	
2.	Accounting	200.00	
3.	Workmens' Compensation	200.00	
4.	Payroll taxes	200.00	
	TOTAL		$ 1,600.00

h. CONTINGENCIES: 2,311.50

TOTAL $ 48,541.50

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 15 1952

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

Not to be filled in by applicant

Docket No. Dmea-2697
Metal or Mineral
Date Received 9-15-52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: James E.Leitch & Thad D.Isham
1418 E.Main St. Owosso,Michigan (business address)
L & I Uranium Development Co.

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

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

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3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Sections 12, 13 T.42N., R29W., Felch Township,Dickinson county,Michigan

(*b*) State any mine name by which the property is known. none at present time

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise lessee

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

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

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

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Explain in detail on acompanying paper.

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Dated September 10, 1952

James E. Leitch
(Applicant)

By Thad D. Schom

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

6. ESTIMATE OF COSTS:

	PER WEEK	
(a) Independent contracts----------	None	
(b) Labor, supervision and consultants:		
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Labor----------	480.00	
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1 Foreman----------	100.00	
1 Bookkeeper----------	75.00	
	$880.00	
TOTAL FOR TWENTY-SIX WEEKS----------		$22,880.00
(c) OPERATING MATERIALS AND SUPPLIES:		
Shovels, picks, sledges, pry-bar, hand hammers, gloves, safety shoes, helmets and goggles----	500.00	
Water pump and piping from spring-	300.00	
Gasoline motor power, gasoline and motor oil----------	450.00	
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TOTAL----------		1,375.00
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7. Miscellaneous tools, owned by applicant and to be rented for a period of expiration----	50.00	
TOTAL----------		18,500.00
(e) REHABILITATION AND REPAIRS----------		None
(f) NEW BUILDING, IMPROVEMENTS AND INSTALLATION:		
1. Office building, including space for bookkeeper, tool shed and lunch room----------	1,500.00	
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3. 2 Oil Heaters----------	200.00	
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1. Repairs and maintenance of operating equipment	$1,000.00	
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TOTAL		$ 1,600.00

h. CONTINGENCIES: 2,311.50

TOTAL $ 48,541.50