DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 3759

DO NOT DETACH THIS SLIP

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

Cys to USBM, USGS, and Reg. I Nw.

This document has been recorded as

Exploration

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

Routing Slip

To:	700	Date	4/7/55
To:	Oper Com	Date	4-29-55
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	

DO NOT DETACH

CONTROLLED DOCUMENT

Apr. 8 '55

OMEN - 3757

Full Cook Uranium Corp.

Wait for Comment.

Comm. memos.

I understand that AEC cannot accept such "ore" at the present.

EWP.

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
3/11/59	Knowe	700
	Selfridge	120
		110
		100
		220
	DMEA-2855	225

(Incoming letter filed in DMEA-2855
D. B. McGee & A. R. Kleinkauf)

Mr. Arthur E. Granger, Chief
Salt Lake Branch
Production Evaluation Division
Atomic Energy Commission
222 South West Temple, Room 210
Salt Lake City, Utah

MAR 13 1959

Re: PSL:BD:mkc

Dear Mr. Granger:

In accordance with your request of March 6, we are enclosing copies of the following property on-site examination reports:

DMEA-3882 Knowles Fisher Corporation, Nadiant claims, Lemhi County, Idaho

DMEA-3974 Western Gold & Uranium, Inc., Silver Reef Mines, Washington County, Utah

DMEA-4291 Ralph E. Patton, et al., Foolproof claims, Custer County, Idaho

DMEA-4575 Idaho Nevada Uranium Corporation, Queen, et al., claims, Elko County, Nevada

We have requested our Reno, Nevada, office to forward a copy of the on-site examination report for Docket No. DMEA-4501, Kern Uranium Company, Little Sparkler and McTom claims, Kern County, California.

No DMEA reports are available because no on-site examinations were made of the following properties:

DMEA-2855 Allen R. Kleinkauf and Donald B. McGee, Minnie Lee and Fiend group of claims, San Bernardino County, California

DMEA-3759 Fall Creek Uranium Corporation, Inc., claims in Caribou Mountains, Bonneville County, Idaho.

FLKnowe/gla 3-11-59 Sincerely yours,
cc to: Director's R. File
Operating Committee
FLKnowe (signed) FRANK E. JOHNSON (RH)
Regions I, II, and III, w/cc
incoming letter Acting Director

Enclosures

43683

700

Docket copy

Murphy
Kiilsgaard
Luhan
Selfridge
Johnson

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

MAY - 2 1955

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

Re: Docket No. DMEA-3759 (Uranium)
Claims in the Caribou Mountains
Bonneville County, Idaho

Dear Mr. Jerman:

Your application for aid in an exploration project and other information available to us in Washington concerning your above-named property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting a small amount of uranium mineralization on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

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

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

FMMurphy/gla
4-26-55
cc: Admr.'s Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region I, MJD (2), w/copy
USGS comments 4/12/55

R.C.L.

Docket copy Murphy

April 22, 1955

Summary or Proposed Project

Object: Denial of application for an exploration project

Docket No.: DMEA-3759

Commodity: Utanium

Applicant: Fall Creek Uranium Corporation, Inc.
Mr. I. Donald Jerman, President
355 Eighth Street
Idaho Falls, Idaho

Property: Owners of eight (8) claims - Nos. 1 to 8 in NE¼, Sec. 4, T. 15, R. 42E., Bonneville County, Idaho. However, only claims Nos. 6 and 7 are made subject to the application.

Date of Application: March 29, 1955

Amount of Application: $21,035.70

Work Proposed:

(1) 220 feet of drifting, consisting of an adit, estimated at 165 feet in length, to reach the end of an old inclined shaft, and then 55 feet of "exploratory tunnels" branching out in "different directions".

(2) 1700 feet of exploratory diamond drilling from the adit or land branching "tunnels."

Estimated Cost of Work Proposed: Independent Contracts

200 ft. 7'x8' @ $30.00/ft.	$6,600.00
1,700 ft. exploratory drilling @ $3.54/ft.	6,018.00
Labor, supervision, and engineering	2,735.00
Operating Materials and Supplies	375.00
Operating Equipment	1,587.00
Rehabilitation and Repairs	500.00
New Bldgs., Improv. & Installations	1,825.00
Miscellaneous	394.00
Contingencies 5%	1,001.70
	$21,035.70

Commodity Committee Members' Comments:

U. S. Geological Survey

T. H. Kiilsgaard, April 12, 1955. See copy of Kiilsgaard's memorandum attached.

U. S. Bureau of Mines

Memorandum dated April 18, 1955 by John E. Crawford stating: "We suggest that action on the application be withheld until a report on the property is available from Ernest Thurlow, Atomic Energy Commission. A letter of March 10, 1955, attached to the application, from Mr. Thurlow to Mr. I. Donald Jerman, President, Fall Creek Uranium Corporation, indicates that an AEC examination will be made of the property in the near future. Results of the examination will be made available to Mr. Hosted, and at that time we shall give the application further consideration."

Rare and Miscellaneous Metals Division - F. M. Murphy, April 22, 1955

A review of Mr. Kiilsgaard's memorandum and the information given in Geological Survey Circular 212, "Uranium-Bearing Coal and Carbonaceous Rocks in the Fall Creek Area, Bonneville County, Idaho," by James D. Vine and George W. Moore, indicates very little possibility that further exploration of the subject property would result in a discovery of an economic uranium ore deposit. Other than 0.145, 0.30, and 0.31 percent uranium shown in three analyses of ash resulting from burning the coal from one foot seams, the analyses of 52 samples taken from the subject prospect workings, and reported in the above-mentioned Circular 212, show values ranging from 0.003 to 0.035 percent uranium equivalent.

Although a minor amount of radioactive material is present in the non-commercial coal seam on the subject property, there is little possibility of discovering an economic ore deposit. Therefore, this Division recommends that the subject application should be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

4/25/55 gla

Minerals Administration
RECEIVED

XXXXXXXXXXXXXXXXXX
So. 157 Howard Street
Spokane 4, Washington

April 20, 1955

Mr. Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

Re: Docket No. DMEA-3759 (uranium)
Application for DMEA assistance
Fall Creek Uranium Corporation, Inc.
Bonneville County, Idaho

Dear Ernie:

We received from our Washington office an application from Mr. I. Donald Jerman, president of Fall Creek Uranium Corporation, Inc., for exploration of a property in the Caribou Mountains in southeastern Idaho. I haven't looked over the docket carefully yet but this appears to be a lignite deposit. Attached to the application is a copy of a letter dated March 3, 1955, from you to Jerman (355 Eighth Street, Idaho Falls, Idaho) acknowledging receipt of a sample analysis by the Bureau of Mines, and expressing the interest of the Commission in further information. We note that on May 20, 1954, you also corresponded with Mr. Joseph Birch concerning a radioactive sample which apparently came from the same property.

I wonder if you have any other information on the property beyond that contained in USGS Circular 212 that would help us in considering it?

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2)
USBM (2)
Nickelson

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

April 20, 1955

Mr. Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

Re: Docket No. DMEA-3759 (uranium)
Application for DMEA assistance
Full Creek Uranium Corporation, Inc.
Bonneville County, Idaho

Dear Ernie:

We received from our Washington office an application from Mr. I. Donald Jerman, president of Full Creek Uranium Corporation, Inc., for exploration of a property in the Caribou Mountains in southeastern Idaho. I haven't looked over the docket carefully yet but this appears to be a lignite deposit. Attached to the application is a copy of a letter dated March 3, 1955, from you to Jerman (355 Eighth Street, Idaho Falls, Idaho) acknowledging receipt of a sample analysis by the Bureau of Mines, and expressing the interest of the Commission in further information. We note that on May 20, 1954, you also corresponded with Mr. Joseph Birch concerning a radioactive sample which apparently came from the same property.

I wonder if you have any other information on the property beyond that contained in USGS Circular 212 that would help us in considering it?

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2)
USBM (2)
Nickelson

4/19/55 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 19 1955

April 18, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3759, Fall Creek Uranium Corp, Inc., claims in the Caribou Mountains, Southeastern Idaho

I have reviewed the attached application of the Fall Creek Uranium Corporation, Inc., DMEA Docket 3759, and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that action on the application be withheld until a report on the property is available from Ernest Thurlow, Atomic Energy Commission. A letter of March 10, 1955, attached to the application, from Mr. Thurlow to Mr. I. Donald Jerman, President, Fall Creek Uranium Corporation, indicates that an AEC examination will be made of the property in the near future. Results of the examination will be made available to Mr. Hosted, and at that time we shall give the application further consideration.

John E. Crawford
John E. Crawford

Attachment

Copy to: Division of Minerals
Branch of Rare & Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAIL

April 18, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3759, Fall Creek Uranium Corp, Inc., claims in the Caribou Mountains, Southeastern Idaho

I have reviewed the attached application of the Fall Creek Uranium Corporation, Inc., DMEA Docket 3759, and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that action on the application be withheld until a report on the property is available from Ernest Thurlow, Atomic Energy Commission. A letter of March 10, 1955, attached to the application, from Mr. Thurlow to Mr. I. Donald Jerman, President, Fall Creek Uranium Corporation, indicates that an AEC examination will be made of the property in the near future. Results of the examination will be made available to Mr. Hosted, and at that time we shall give the application further consideration.

John E. Crawford

Attachment

Copy to: Division of Minerals
Branch of Rare & Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)

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

RECEIVED

April 13, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3759, Fall Creek Uranium Corp, Inc., claims in the Caribou Mountains, Southeastern Idaho

I have reviewed the attached application of the Fall Creek Uranium Corporation, Inc., DMEA Docket 3759, and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that action on the application be withheld until a report on the property is available from Ernest Thurlow, Atomic Energy Commission. A letter of March 10, 1955, attached to the application, from Mr. Thurlow to Mr. I. Donald Jorman, President, Fall Creek Uranium Corporation, indicates that an AEC examination will be made of the property in the near future. Results of the examination will be made available to Mr. Hosted, and at that time we shall give the application further consideration.

John E. Crawford

Attachment

Copy to: Division of Minerals
Branch of Rare & Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)

4/13/55 gla

IN REPLY REFER TO:

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

Department of the Interior
Defense Minerals Adm.
RECEIVED
APR 13 1955

April 12, 1955

Memorandum

To: E. W. Ellis, Chief, Rare and Miscellaneous Minerals Division, Defense Minerals Exploration Administration

From: T. H. Kiilsgaard, U. S. Geological Survey

Subject: Review of application DMEA Docket No. 3759, Fall Creek Uranium Corp., Bonneville County, Idaho

The cited application proposes to drive 220 feet of adit to reach the end of an old 165-foot inclined shaft, from which point they plan to "branch out in different directions with exploratory tunnels", and also to do an estimated 1700 feet of diamond drilling. Total estimated cost of the proposed project is $21,035.70.

The property to be explored is an old coal prospect adjacent to the Fall Creek road, about a mile west of the Fall Creek Ranger Station. Mine workings consist of an 80-foot inclined shaft which follows the dip of a thin coal bed occurring in the Bear River formation of Cretaceous age. There is also a small open cut on the coal bed outcrop a few hundred feet northwest of the shaft.

I visited the Fall Creek coal prospect in 1950. At that time the inclined shaft was barely accessible; the lower end being caved. The coal seam was thin, badly crushed, and contained several shale and clay partings. It looked like a hungry prospect which had never been productive and which had been idle for many years.

In 1951, J. D. Vine and G. W. Moore of the Geological Survey, in an investigation of potential uranium-bearing carbonaceous sedimentary rocks in the western states conducted for the AEC, discovered uraniferous coal at the Fall Creek property. They took a total of 48 samples at the property of which the best sample assayed 0.110 percent uranium in the coal and 0.222 percent uranium in the ash. They found the uranium mineralization to be greatest at or near the top of the coal bed, and to diminish downward through the coal. Of the coal sampled, the best assays were obtained in the top of the coal bed near the bottom of the shaft. Their conclusions were that the uranium originated in volcanic rocks which at one time capped the Cretaceous formations, the remnants of which were found to be faintly radioactive. They reasoned that as the volcanics had eroded away the released

uranium had been carried downward by percolating waters to be absorbed in the first carbonaceous material encountered. Results of their studies were published in U. S. Geological Survey Circular 212.

On the basis of previous studies, Vine and Moore returned to the Fall Creek area in 1952 to map and study the area in more detail. This work was followed by a diamond drilling project on the Fall Creek property by the Geological Survey in 1953, the purpose of which was to determine the thickness and grade of the uranium-bearing zone. Six holes were drilled at the Fall Creek property the shallowest being 55 feet and the deepest 472 feet. One hole was drilled 300 feet from the Fall Creek inclined shaft, the remaining holes in nearby areas. All holes were NX core size. Good core was obtained in the more competent beds but recovery in the coaly shale beds was poor. Caving, loss of circulation, reaming, cementing, and redrilling extended the project beyond the expected time limit. Drill results showed the geology of the area to be more complex than had been anticipated. Only one hole penetrated the expected thickness of radioactive carbonaceous rocks, the rest failing because of faulted offsets and steepening of the dip at depth.

Studies by Vine and Moore in 1952 and 1953 coincided with their earlier observations that the uranium was concentrated in the uppermost coaly layer of rocks underlying the area. Within the 4-foot coaly shale member explored by the inclined shaft the uranium content was found to vary from 0.004 to 0.131 percent uranium, with the top 1-foot of the member averaging about 0.44 percent uranium and the bottom 1-foot about 0.008 percent uranium. The results of these studies are contained in TEI Report 451.

In view of the results contained in the aforementioned reports I find it difficult to see where the proposed exploration project can be successful. The bulk of the work will be devoted to reaching the bottom of the inclined shaft, and this work can in no way be considered as exploration since the radioactive coal seam in the shaft has already been thoroughly sampled. As the coaly seam is narrow, at best 4 feet, and low grade -- the lower 3 feet averaging 0.01 percent uranium -- there is obviously little to be gained by 700 feet of core drilling or the limited drifting that might be done. Moreover, if the epigenetic origin of the uraniferous coal is correct, there is no reason to expect the coal to be noticeably enriched at other locations.

A final point against the program is that the AEC is not buying uraniferous coal. As the property appears to be held as unpatented claims there is even question on whether the ownership is clear. The right of location on coal beds in the public domain was withdrawn years ago, and, to my knowledge, the question of whether the locator or the Government owns the uranium in a coal bed remains unsettled.

In the light of the known data on the Fall Creek deposit I recommend denial of the application before it is sent to the field for review. Any referral to the field for additional study on this deposit will be a needless waste of the Field Team's time.

Thor H. Kiilsgaard

Thor H. Kiilsgaard

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

March 30, 1955

RECEIVED
APR - 4 1955

Defense Minerals Exploration Administration
Department of Interior
Washington, D. C.

Dear Sirs:

Herewith are supporting papers accompanying Form MT-103 (Revised April, 1952) requesting an "Application for aid in an Exploration Project, Pursuant to DMEA Order 1, under the Defense Production Act of 1950" as amended, consisting of 11 sheets or combination of sheets with the original letter and 10 sheets with each of the other 4. Bulletin No. 212 (U.S.G.S.) is submitted with the original but not with each of the other 4 carbon copies of the application.

You are kindly requested to review the contents of the application at your learliest possible convenience, in order that work may be started during the early spring.

A favorable reply regarding the matter would be appreciated by return mail.

Yours very truly,

I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
RECEIVED
APR 4 1955

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. 3759
Metal or Mineral Uranium
Date Received 4-4-55
Estimated Cost $21,035.70
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: I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

(*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. Done

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. See attached sheet under 1.(c)

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

~~[illegible]~~

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. Done.
Four copies of all papers submitted, except Bulletin No. 212.

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 Fall Creek Uranium Corporation property is located in the NE 1/4 Sec.4, T15S., R 42 E in the Caribou Mountains of Southeastern Idaho. The property consists of 8 claims in the tital property involved, each being recorded as Claims 1,2,3,4,5,6,7 and 8. Claims No.1,2,3,4,5 and 6 are to be excluded from the terms of this application.

(*b*) State any mine name by which the property is known. Fall Creek Uranium Corporation.

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

(*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. Owners

(*e*) If you own the land, describe any liens or encumbrances on it No liens, encumbrances or debts.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. No unpatented claims.

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. See attached sheet under 4.(a)

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See attached sheet under 4.(b)

(*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. See attached sheet under 4.(c)

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See attached sheet under 4. (d)

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. See attached sheet under 4.(e)

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore We wish to explore for 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. See attached sheet under 5. (b)

(*c*) The work will start within ..... days and be completed within ..... months from the date of an exploration project contract. See attached sheet under 5. (c)

(*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 See attached sheet under 5 (d)

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.). See attached sheet under 6. (a)

(*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. See attached sheet under 6. (b)

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See attached sheet under 6. (c)

(*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. See attached sheet under 6. (d)

(*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. See attached sheet under 6. (e)

(*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. See attached sheet under 6. (f)

(*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. See attached sheet under 6. (g)

(*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. See attached sheet under 6. (h)

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)? Yes

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

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

Explain in detail on acompanying paper. See attached sheet under 7. (b)

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 March 29, 1955

Fall Creek Uranium Corporation, Inc.
(Applicant)

By
I. Donald Jerman

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

1. (c) I. Donald Jerman, President, 355 -8th Street, Idaho Falls, Idaho
Edith Birch, Vice-President, 965 Blaine Avenue, Idaho Falls, Idaho
Jack Olson, Secretary-Treasurer, Lorenzo, Idaho
Joe Birch, Member, Board of Directors, 965 Blaine Av., Idaho Falls, Idaho

4. (a) Approximately 30 years ago an incline shaft was run in a coal formation to a depth of approximately 85 feet on a 33 degree incline. In 1952 the U. S. Geological Survey did limited exploratory drilling and testing on the property. Their Circular No. 212 contains extensive information as to location, accessibility, formations and tests taken. A copy of this Circular is included with this application.

In 1954 an access road to a new tunnel portal was made and excavation for the tunnel and portal was initiated.

Further testing has been done by the owner and in most cases the uranium per cent has been higher than shown in Circular No. 212 supposedly due to the tests being taken further back than the exposed surface of the old shaft.

The use of scintilators show additional evidence of the existence of much higher grade uranium ore in the vicinity of the old shaft, but its line is traversing the area in a somewhat different direction.

4. (b) No production work has been carried on to date, but the owner has equipment at its disposal to explore any valuable ore deposits.

4. (c) Geologic features of the property along with maps and sketches are shown in the above mentioned Geological survey Circular No. 212. This Circular, page 6, mentions that "it is interesting to note that the grade of ore

4. (c) continued

increases toward the lower portion of the inclined shaft." For this reason, as well as because of other tests we have had assayed and because of new scintilator discoveries we feel that large deposits of valuable ore are quite likely. Reports of losing core samples at lower elevations in exploratory drilling also help give us a desire to do further work as the ore imporved in value as the depth increased.

4. (d) As stated above, the property is located 11 miles from U. S. Highway 26 and is on a good improved graded road. It is 27 miles from rail facilities at Ririe, Idaho, and 40 miles from Idaho Falls, Idaho. Roads could be kept open the year around and production could be on a year round basis. Eight months of the year the road would be free of snow.

4. (e) There is sufficient manpower available in Eastern Idaho. Equipment, supplies and materials are also available locally. The water supply for any mining operation is available at the porperty, both from Peterson Creek and various springs. Peterson Creek runs within 70 feet of the old and new tunnel entrances, and a good high head spring is located approximately 500 feet from Peterson Creek.

5. (b) We desire to drive a 7' X 8' tunnel to the end of the old inclined shaft (a distance of approximately 165 feet) then branch out in different directions with exploratory tunnels and diamond drill holes to locate the highest grade ore.

5. (c) We propose to start work as soon as possible this spring, and have it completed within six months.

5. (d) The officers of the Fall Uranium Corporation have had considerable experience in mining and construction work.

I. Donald Jerman, President of the Corporation, is a licensed engineer in Utah, Idaho and Wyoming, with 35 years engineering experience with the Bureau of Reclamation and the Utah Highway Commission and Water Resources Commission.

Joseph A. Birch has spent most of his life in mining and prospecting work.

Otto Lobnitz is a contractor with considerable experience in rock and tunneling work, and in the operation of heavy equipment.

Jack Olsen, secretary-treasurer, is a contractor with experience in mining operations and construction and heavy equipment operation.

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

6. Estimate of Costs.

(a) Independent contracts.

1. 220 lin. ft. 7'x8' tunnel @ $30.00	$6600.00
2. /700 lin. ft. exploratory drilling @ 3.54	6018.00

(b) Labor, supervision, engineering.

1. Engineering - 180 hrs. @ $4.50	810.00
2. Supervision - 150 hrs. @ $2.50	375.00
3. Geologist	200.00
4. Watchman - 5 mo. @ $200.	1000.00
5. Accounting, clerical, secretarial	350.00

(c) Operating, Materials and Supplies.

1. Nails, hardware, lumber, etc.	150.00

6. Estimate of Costs (continued)

(c) Operating, materials and supplies.	
2. Explosives and supplies	150.00
3. Miscellaneous	75.00
(d) Operating equipment.	
1. Scintilator and related equipment	500.00
2. Portable generator	725.00
3. Air hammers or related	362.00
(e) Rehabilitation and repairs.	
1. Repair and enlarge existing building	500.00
(f) New buildings, improvements, installations.	
1. Office and tool shed	1025.00
2. Bunk house	800.00
(g) Miscellaneous	
1. Travel expenses	244.00
2. Assays, sample testing	150.00
(h) Contingencies 5%	1001.70
GRAND TOTAL	21,035.70

7. (b) The Fall Creek Uranium Corporation has $2,332.80 cash for their share of the work. The contractor on the tunnel work and drilling has agreed to take $2,927.20 in Corporate Stock. This amount totals $5,260.00, which is over 25 per cent of the total cost.

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Raw Materials
Salt Lake Exploration Branch

Address Reply To:
U.S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

And Refer To:
SLEB:vh

May 20, 1954

Mr. Joseph Birch
965 Blaine Ave.
Idaho Falls, Idaho

Dear Mr. Birch:

We have received a copy of the radioactive sample report furnished you by H. L. Gibbs of the Bureau of Mines dated May 13, 1954.

The sample which was analyzed for you is of interest to the Atomic Energy Commission, and we would appreciate receiving further information regarding the location of the property from which the sample was taken and the approximate tonnage that it might represent. Enclosed for your convenience in supplying this information is our Form 95 and a self-addressed franked envelope which requires no postage.

If it is convenient for you to do so, we would appreciate receiving a sample of this material for further analysis. We will supply you with a copy of the results free of charge.

We will be glad to answer any questions concerning the raw materials program.

Very truly yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

Enclosure
1. Form 95 w/envelope

cc. DRM, NY

ATOMIC METALS CORPORATION

Cafritz Building

Washington 6, D. C.

September 16, 1954

Mr. Joseph M. Birch,
965 Blaine Avenue,
Idaho Falls, Idaho.

Dear Mr. Birch:

The carbonaceous material which you recently sent us has been examined by the laboratory and found to have a low uranium content. If this material is readily accessible and occurs in large quantities, it might be of interest to us as a mining venture.

AMC would be interested only in the mining possibilities. It is likely, however, that uranium could be mined without interfering with other uses that you may have in mind for the property.

In order to undertake the necessary exploration and development, we would have to have a lease or option to lease agreement with you. AMC uses the short form mining lease which starts with a 12½% royalty on the production of the mine and increases to 20% royalty after the first one million dollars. If you are interested, please send us an outline of information on the property and we will send you a copy of our standard lease agreement.

With best wishes.

Sincerely yours,

Max Malin

UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Raw Materials
Salt Lake Exploration Branch

Address Reply To:
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

March 3, 1955

And Refer to:
SLEB:vh

Mr. J. D. Jerman
355 Eighth Street
Idaho Falls, Idaho

Dear Mr. Jerman:

We have received a copy of the radioactive sample report furnish you by Mr. Heber E. Peterson of the Bureau of Mines Dated January 28, 1955.

The sample which was analyzed for you is of interest to the Atomic Energy Commission, and we would appreciate receiving further information regarding the location of the property from which the sample was taken and the approximate tonnage that it might represent. Enclosed for your convenience in supply this information is our Form 95 and a self-addressed franked envelope which requires no postage.

We will be glad to answer any questions concerning the raw materials program.

Very truly yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

Enclosure
1. Form 95 w/envelope

cc. DRM, Washington

UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Raw Materials
Salt Lake Exploration Branch

Address reply to:

U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

And refer to:

March 10, 1955

SLEB:EET:af

Mr. L. Donald Jerman
355 Eighth Street
Idaho Falls, Idaho

Dear Mr. Jerman:

Thank you for your letter and the completed Form 95 which indicates that this is the same property that was previously examined and drilled by the U. S. Geological Survey.

There will be a geologist from this office in your area this spring, and he will contact you and make arrangements to examine the property.

Meanwhile, we would appreciate hearing from you if you have any new developments to report.

Thank you for your interest in the search for uranium.

Very truly yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

TESTS OR URANIUM ORE.
Fall Creek Uranium Corp.

Serial No.	Description	Lot No.	eU3O8	cU3O8	Date.
23476	Piece of Lignite	F 10614	0.08 %	0.09378%	2-15-54.
29301	" "	102473	0.09 %	0.111 %	6-22-54.

Above Tests reported to E. E. Thurlow.

Chief: Salt Lake Exploration Branch.
Atomic Energy Commission.

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

April 7, 1955
Subject: DMEA 3759
Re: Exploration Assistance

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

Dear Mr. Jerman:

The receipt of your application dated March 29, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA 3759 and referred to the Rare and Miscellaneous Metals Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR - 4 1955

March 30, 1955

Defense Minerals Exploration Administration
Department of Interior
Washington, D. C.

Dear Sirs:

Herewith are supporting papers accompanying Form MF-103 (Revised April, 1952) requesting an "Application for aid in an Exploration Project, Pursuant to DMEA Order 1, under the Defense Production Act of 1950" as amended, consisting of 11 sheets or combination of sheets with the original letter and 10 sheets with each of the other 4. Bulletin No. 212 (U.S.G.S.) is submitted with the original but not with each of the other 4 carbon copies of the application.

You are kindly requested to review the contents of the application at your learliest possible convenience, in order that work may be started during the early spring.

A favorable reply regarding the matter would be appreciated by return mail.

Yours very truly,

I. Donald Jerman

I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.

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
APR - 4 1955

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. 3759
Metal or Mineral Uranium
Date Received 4-4-55
Estimated Cost $21,035.70
Participation (Government %)

INSTRUCTIONS

(*) Bonneville County

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: I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

(*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. Done

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. See attached sheet under 1.(c)

(*d*) If a partnership, add to the above statement the names and addresses of all partners. ~~Four copies of all papers submitted, except Bulletin No. 212.~~

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. Done.
Four copies of all papers submitted, except Bulletin No. 212.

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 Fall Creek Uranium Corporation property is located in the NE 1/4 Sec.4, T1S., R 42 E in the Caribou Mountains of Southeastern Idaho.(*)
The property consists of 8 claims in the tital property involved, each being recorded as Claims 1,2,3,4,5,6,7 and 8. Claims No.1,2,3,4,5 and 8 are to be excluded from the terms of this application.

(*b*) State any mine name by which the property is known. Fall Creek Uranium Corporation.

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

(*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. Owners

(*e*) If you own the land, describe any liens or encumbrances on it No liens, encumbrances or debts.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. No unpatented claims.

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. See attached sheet under 4.(a)

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades See attached sheet under 4.(b)

(*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. See attached sheet under 4.(c)

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See attached sheet under 4. (d)

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. See attached sheet under 4.(e)

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore We wish to explore for 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. See attached sheet under 5. (b)

(*c*) The work will start within ..... days and be completed within ..... months from the date of an exploration project contract. See attached sheet under 5. (c)

(*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 See attached sheet under 5 (d)

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.). See attached sheet under 6. (a)

(*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. See attached sheet under 6. (b)

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See attached sheet under 6. (c)

(*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. See attached sheet under 6. (d)

(*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. See attached sheet under 6. (e)

(*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 See attached sheet under 6. (f)

(*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. See attached sheet under 6.(g)

(*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. See attached sheet under 6.(h)

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)? Yes

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

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

Explain in detail on acompanying paper. See attached sheet under 7.(b)

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 March 29, 1955

Fall Creek Uranium Corporation, Inc.
(Applicant)

By I. Donald Jerman
I. Donald Jerman

President of Corporation, Inc.

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

1. (c) I. Donald Jerman, President, 355 -8th Street, Idaho Falls, Idaho
Edith Birch, Vice-President, 965 Blaine Avenue, Idaho Falls, Idaho
Jack Olson, Secretary-Treasurer, Lorenzo, Idaho
Joe Birch, Member, Board of Directors,965 Blaine Av.,Idaho Falls,Idaho

4. (a) Approximately 30 years ago an incline shaft was run in a coal formation to a depth of approximately 85 feet on a 33 degree incline. In 1952 the U. S. Geological Survey did limited exploratory drilling and testing on the property. Their Circular No. 212 contains extensive information as to location, accessibility, formations and tests taken. A copy of this Circular is included with this application.

In 1954 an access road to a new tunnel portal was made and excavation for the tunnel and portal was initiated.

Further testing has been done by the owner and in most cases the uranium per cent has been higher than shown in Circular No. 212 supposedly due to the tests being taken further back than the exposed surface of the old shaft.

The use of scintilators show additional evidence of the existence of much higher grade uranium ore in the vicinity of the old shaft, but its line is traversing the area in a somewhat different direction.

4. (b) No production work has been carried on to date, but the owner has equipment at its disposal to explore any valuable ore deposits.

4. (c) Geologic features of the property along with maps and sketches are shown in the above mentioned Geological survey Circular No. 212. This Circular, page 6, mentions that "it is interesting to note that the grade of ore

4. (c) continued

increases toward the lower portion of the inclined shaft." For this reason, as well as because of other tests we have had assayed and because of new scintilator discoveries we feel that large deposits of valuable ore are quite likely. Reports of losing core samples at lower elevations in exploratory drilling also help give us a desire to do further work as the ore imporved in value as the depth increased.

4. (d) As stated above, the property is located 11 miles from U. S. Highway 26 and is on a good improved graded road. It is 27 miles from rail facilities at Ririe, Idaho, and 40 miles from Idaho Falls, Idaho. Roads could be kept open the year around and production could be on a year round basis. Eight months of the year the road would be free of snow.

4. (e) There is sufficient manpower available in Eastern Idaho. Equipment, supplies and materials are also available locally. The water supply for any mining operation is available at the porperty, both from Peterson Creek and various springs. Peterson Creek runs within 70 feet of the old and new tunnel entrances, and a good high head spring is located approximately 500 feet from Peterson Creek.

5. (b) We desire to drive a 7' X 8' tunnel to the end of the old inclined shaft (a distance of approximately 165 feet) then branch out in different directions with exploratory tunnels and diamond drill holes to locate the highest grade ore.

5. (c) We propose to start work as soon as possible this spring, and have it completed within six months.

5. (d) The officers of the Fall Uranium Corporation have had considerable experience in mining and construction work.

I. Donald Jerman, President of the Corporation, is a licensed engineer in Utah, Idaho and Wyoming, with 35 years engineering experience with the Bureau of Reclamation and the Utah Highway Commission and Water Resources Commission.

Joseph M. Birch has spent most of his life in mining and prospecting work.

Otto Lobnitz is a contractor with considerable experience in rock and tunneling work, and in the operation of heavy equipment.

Jack Olsen, secretary-treasurer, is a contractor with experience in mining operations and construction and heavy equipment operation.

Mr. I. Donald Jerman, President
Fall Creek Uranium Corp., Inc.
355 Eighth Street
Idaho Falls, Idaho

6. Estimate of Costs.

(a)	Independent contracts.	
	1. 220 lin. ft. 7'x8' tunnel @ $30.00	$6600.00
	2. /700 lin. ft. exploratory drilling @ 3.54	6018.00
(b)	Labor, supervision, engineering.	
	1. Engineering - 180 hrs. @ $4.50	810.00
	2. Supervision - 150 hrs. @ $2.50	375.00
	3. Geologist	200.00
	4. Watchman - 5 mo. @ $200.	1000.00
	5. Accounting, clerical, secretarial	350.00 27335.
(c)	Operating, Materials and Supplies.	
	1. Nails, hardware, lumber, etc.	150.00

6. Estimate of Costs (continued)

Department of the Interior
Defense Minerals Administration
RECEIVED
APR - 4 1955

(c) Operating, materials and supplies.		
2. Explosives and supplies	150.00	
3. Miscellaneous	75.00	225
(d) Operating equipment.		
1. Scintilator and related equipment	500.00	
2. Portable generator	725.00	
3. Air hammers or related	362.00	1587.
(e) Rehabilitation and repairs.		
1. Repair and enlarge existing building	500.00	—
(f) New buildings, improvements, installations.		
1. Office and tool shed	1025.00	
2. Bunk house	800.00	1825
(g) Miscellaneous		
1. Travel expenses	244.00	394
2. Assays, sample testing	150.00	
(h) Contingencies 5%	1001.70	—
GRAND TOTAL	21,035.70	

7. (b) The Fall Creek Uranium Corporation has $2,332.80 cash for their share of the work. The contractor on the tunnel work and drilling has agreed to take $2,927.20 in Corporate Stock. This amount totals $5,260.00, which is over 25 per cent of the total cost.

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Ray Materials
Salt Lake Exploration Branch

Address Reply To:
U.S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

And Refer To:
SLEB:vh

May 20, 1954

Mr. Joseph Birch
965 Blaine Ave.
Idaho Falls, Idaho

Dear Mr. Birch:

We have received a copy of the radioactive sample report furnished you by H. L. Gibbs of the Bureau of Mines dated May 13, 1954.

The sample which was analyzed for you is of interest to the Atomic Energy Commission, and we would appreciate receiving further information regarding the location of the property from which the sample was taken and the approximate tonnage that it might represent. Enclosed for your convenience in supplying this information is our Form 95 and a self-addressed franked envelope which requires no postage.

If it is convenient for you to do so, we would appreciate receiving a sample of this material for further analysis. We will supply you with a copy of the results free of charge.

We will be glad to answer any questions concerning the raw materials program.

Very truly yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

Enclosure
1. Form 95 w/envelope

cc. DRM, NY

ATOMIC METALS CORPORATION

Cafritz Building

Washington 6, D. C.

September 16, 1954

Mr. Joseph M. Birch,
965 Blaine Avenue,
Idaho Falls, Idaho.

Dear Mr. Birch:

The carbonaceous material which you recently sent us has been examined by the laboratory and found to have a low uranium content. If this material is readily accessible and occurs in large quantities, it might be of interest to us as a mining venture.

AMC would be interested only in the mining possibilities. It is likely, however, that uranium could be mined without interfering with other uses that you may have in mind for the property.

In order to undertake the necessary exploration and development, we would have to have a lease or option to lease agreement with you. AMC uses the short form mining lease which starts with a 12½% royalty on the production of the mine and increases to 20% royalty after the first one million dollars. If you are interested, please send us an outline of information on the property and we will send you a copy of our standard lease agreement.

With best wishes.

Sincerely yours,

Max Malin

UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Raw Materials
Salt Lake Exploration Branch

Address Reply To;
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

March 3, 1955

And Refer to:
SLEB:vh

Mr. J. D. Jerman
355 Eighth Street
Idaho Falls, Idaho

Dear Mr. Jerman:

We have received a copy of the radioactive sample report furnish you by Mr. Heber E. Peterson of the Bureau of Mines Dated January 28, 1955.

The sample which was analyzed for you is of interest to the Atomic Energy Commission, and we would appreciate receiving further information regarding the location of the property from which the sample was taken and the approximate tonnage that it might represent. Enclosed for your convenience in supply this information is our Form 95 and a self-addressed franked envelope which requires no postage.

We will be glad to answer any questions concerning the raw materials program.

Very truly yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

Enclosure
1. Form 95 w/envelope

cc. DRM, Washington

UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Raw Materials
Salt Lake Exploration Branch

Address reply to:

U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

And refer to:

SLEB:EET:af

March 10, 1955

Mr. I. Donald Jerman
355 Eighth Street
Idaho Falls, Idaho

Dear Mr. Jerman:

Thank you for your letter and the completed Form 95 which indicates that this is the same property that was previously examined and drilled by the U. S. Geological Survey.

There will be a geologist from this office in your area this spring, and he will contact you and make arrangements to examine the property.

Meanwhile, we would appreciate hearing from you if you have any new developments to report.

Thank you for your interest in the search for uranium.

Very truly yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

TESTS OR URANIUM ORE.
Fall Creek Uranium Corp.

Serial No.	Description	Lot No.	eU_3O_8	cU_3O_8	Date.
23476	Piece of Lignite	F 10614	0.08 %	0.09378%	2-15-54.
29301	" "	102473	0.09 %	0.111 %	6-22-54.

Above Tests reported to E. E. Thurlow.

Chief: Salt Lake Exploration Branch.
Atomic Energy Commission.

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

CIRC. 212

DMEA-8759

Mr. I. Donald Jerman, President
Fall Creek Uranium Corporation, Inc.
355 Eighth Street
Idaho Falls, Idaho

GEOLOGICAL SURVEY CIRCULAR 212

URANIUM-BEARING COAL AND CARBONACEOUS ROCKS IN THE FALL CREEK AREA BONNEVILLE COUNTY, IDAHO

By James D. Vine and George W. Moore

UNITED STATES DEPARTMENT OF THE INTERIOR
Oscar L. Chapman, Secretary

GEOLOGICAL SURVEY
W. E. Wrather, Director

GEOLOGICAL SURVEY CIRCULAR 212

URANIUM-BEARING COAL AND CARBONACEOUS ROCKS IN THE FALL CREEK AREA, BONNEVILLE COUNTY, IDAHO

By James D. Vine and George W. Moore

check pg. 6

This report concerns work done on behalf of the U. S. Atomic Energy Commission and is published with the permission of the Commission.

Washington, D. C., 1952

Free on application to the Geological Survey, Washington 25, D. C.

URANIUM-BEARING COAL AND CARBONACEOUS ROCKS IN THE FALL CREEK AREA, BONNEVILLE COUNTY, IDAHO

CONTENTS

	Page
Abstract	1
Introduction	1
Geography	2
Location	2
Topography	2
Accessibility	2
General geology	3
Structure	3
Sedimentary rocks	3
Igneous rocks	3
Fall Creek coal prospect	3
Introduction	3
Structure	4
Sedimentary rocks	4
Uranium-bearing coal, carbonaceous shale, and carbonaceous limestone	6
Mineralogy	9
Origin	10
References cited	10

ILLUSTRATIONS

		Page
Plate 1.	Graphs of relations at the Fall Creek coal prospect, Bonneville County, Idaho: A, Diagrammatic longitudinal section; B, Percent uranium and ash in samples	In pocket
Figure 1.	Index map of southeastern Idaho showing the areal distribution of coal-bearing rocks of Cretaceous age and radioactive silicic volcanic rocks	2
2.	Geologic sketch map of the Fall Creek area, Bonneville County	5
3.	Stratigraphic section of the upper part of the Bear River formation and the lower part of the Wayan formation as measured at the Fall Creek adit	6
4.	A, View of Fall Creek coal prospect showing position of entry and trace of coal bed with relation to road and surrounding hills; B, Interior view of Fall Creek coal prospect, taken 50 ft from portal, showing stratigraphic sequence of mineralized beds and percent uranium in the sample	7

TABLE

		Page
Table 1.	Analyses of samples collected from the Fall Creek coal prospect	8

ABSTRACT

Uraniferous coal, carbonaceous shale, and carbonaceous limestone occur in the Bear River formation of Early Cretaceous age at the Fall Creek prospect, in the Fall Creek area, Bonneville County, Idaho. The uranium compounds are believed to have been derived from mildly radioactive silicic volcanic rocks of Tertiary age that rest unconformably on all older rocks and once overlay the Bear River formation and its coal. Meteoric water, percolating downward through the silicic volcanic rocks and into the older rocks along joints and faults, is believed to have brought the uranium compounds into contact with the coal and carbonaceous rocks in which the uranium was absorbed.

INTRODUCTION

Uraniferous coal, lignite, and associated carbonaceous rocks were searched for in the summer of 1951 as part of the Geological Survey's program for the investigation of carbonaceous sedimentary rocks, in the western states, that might be potential sources of uranium. This work was done on behalf of the Division of Raw Materials of the U. S. Atomic Energy Commission. The occurrence of small quantities of uranium with lignite had been reported previously from other areas by Slaughter and others (1946), Staatz and others (1951), and Wyant and others (1951). The uraniferous coal at the Fall Creek prospect was found as the result of reconnaissance radiometric examination of coals in Colorado, Wyoming, and Idaho closely associated with volcanic rocks, an association believed to be favorable for the occurrence of uranium in carbonaceous rocks (Denson, Bachman, and Zeller, 1950).

Radiometric examination was made chiefly with a Geiger-Muller counter. A scintillometer was available for a short time and it was used in the radiometric examination of the silicic volcanic rocks because this instrument permits the recognition of lower radioactivity anomalies than does the counter used. All

radioactive coals and associated carbonaceous rocks found were sampled for analysis and lithologic study. Mildly radioactive igneous rocks, considered to be possible source rocks for uranium, were sampled for mineralogic and petrographic study.

Louis S. Gardner visited the area and assisted with the interpretation of the structural and stratigraphic relations; he also made available his manuscript maps of the area. Norman M. Denson also visited the area and aided in the interpretation of factors contributing to the localization of the uranium compounds.

GEOGRAPHY

Location

The Fall Creek prospect is in the NE$\frac{1}{4}$ sec. 4, T. 1 S., R. 42 E., in the Caribou Mountains of southeastern Idaho (fig. 1). The adit is adjacent to the Fall Creek road in the Caribou National Forest and may be reached as follows: Take State Highway 29 west from the town of Swan Valley about 3 miles; turn left onto a graveled road at the west side of the bridge which crosses the Snake River; proceed along this road for about 1 mile, then turn right at the junction with the Fall Creek road and continue along this road about 12 miles. The adit is marked by a small wooden structure about 1 mile beyond the Fall Creek Guard station, on the south side of the road at a sharp curve in the road. The total driving distance from Swan Valley is about 16 miles.

Topography

The topography, as shown on the U. S. Geological Survey Hell Creek quadrangle sheet, ranges in elevation from about 5,800 to 7,600 ft above sea level, thus indicating a maximum relief of 1,800 ft. The grassy, soil-covered slopes in the vicinity of the prospect opening are known as the Fall Creek basin and form the headwaters of Fall Creek, which flows northeast to join the Snake River opposite the town of Swan Valley. Except for a few rock ledges the area is covered with a dense growth of grass and stands of aspen and conifers.

Accessibility

The nearest town is Swan Valley, 16 miles distant, 13 miles of which is a graded dirt road and 3 miles of which is paved. A railroad station is located on the Union Pacific Railroad at Victor, Idaho, a distance of about 21$\frac{1}{2}$ miles beyond Swan Valley to the northeast, mostly on graded dirt road. The railroad at Idaho Falls, to the northwest, may be nearer, but the distance was not measured and the condition of the road is not known.

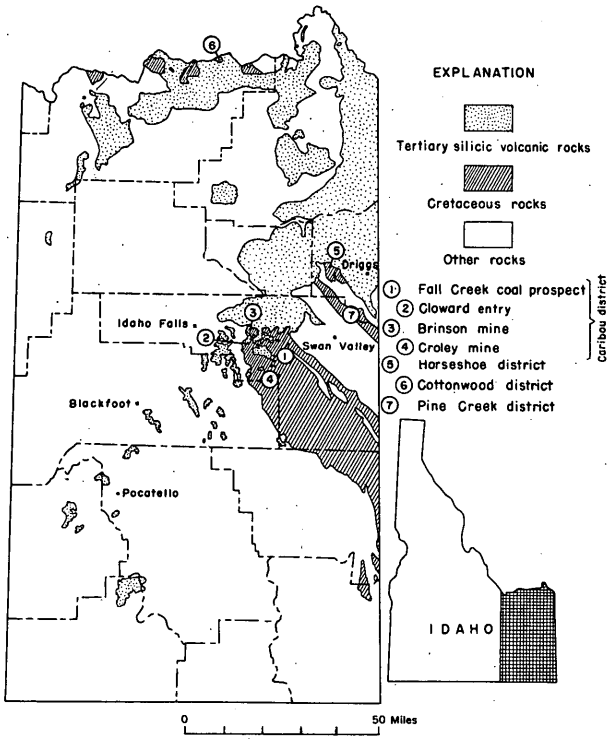


Figure 1.--Index map of southeastern Idaho showing the areal distribution of coal-bearing rocks of Cretaceous age and radioactive silicic volcanic rocks.

GENERAL GEOLOGY

Structure

The Caribou Mountains are part of the system of parallel mountains which form an arcuate belt along the Idaho-Wyoming border. The Caribou Range lies at the northern end of the arc where the prominent structural features trend northwest to plunge beneath the lavas of the Snake River Plain. Tight folds and thrust sheets characterize the complex structure of the Caribou Mountains. The Snake River flows along a strike valley with the Caribou Range on the southwest side and the Snake River Range on the northeast side. Also to the southwest lie other ridges belonging to the same system of parallel mountains; eventually they give way to the block faulted type of mountains which characterizes the Great Basin.

Sedimentary rocks

Mesozoic and Paleozoic strata are exposed in the Caribou Range. The following tabular description of the Cretaceous sedimentary rocks exposed in the vicinity of the Fall Creek prospect is taken chiefly from Kirkham (1924, pp. 23-29). The Bear River formation is described from the authors' observations in the field, following the usage of Louis S. Gardner.

Sedimentary strata exposed in the vicinity of the Fall Creek prospect

Age	Series		Formation	Thickness (feet)	Description
Cretaceous	Upper Cretaceous.		Wayan ----------	8,800	Sandstones, grits, conglomerates, shales, limestones, and ash beds of fresh-water and continental origin.
			Bear River-------	150+	Black shale of brackish and fresh-water origin, quartzite, and thin beds of coal and carbonaceous limestone.
	Lower Cretaceous	Gannett group.	Tygee sandstone ------	1,020	Sandstone, reddish, yellowish, and gray and carbonaceous shale.
			Draney limestone ------	175	Limestone, very fine grained, light gray, also 25 feet of dark-colored coarse-grained limestone at the top.
			Bechler shale----------	225	Red shale, soft, weathers into a red soil.
			Peterson limestone ------	50	Limestone, massive, fine grained, dark gray; contains calcite seams and dark chert nodules.
			Ephraim conglomerate ---	360	Conglomerate, massive; sandstone, reddish; shale, reddish; and limestone.
Jurassic	Upper Jurassic		Stump sandstone.		

Kirkham (1924, p. 26) states that the Tygee sandstone unconformably underlies the Wayan formation and makes no mention of the Bear River formation, which Gardner (personal communication) recognizes between the Tygee and the Wayan. It seems probable that Kirkham has included the Bear River formation in the Tygee sandstone.

Igneous rocks

Tertiary volcanic rocks of several types and ages lie unconformably on the steeply tilted Mesozoic and Paleozoic strata. Ross and Forrester (1947) show three classes or groups of volcanic rocks in this area:

Pleistocene and Recent--Snake River basalt (chiefly basaltic flows).

Pliocene(?)--Salt Lake formation and associated strata (rather poorly consolidated sand, silt, and gravel of lacustrine and fluviatile origin, including fan deposits. Minor quantities of rhyolitic flows and welded tuffs and of basalts are included. Some of the sediments are tuffaceous, and fresh water limestone is locally present).

Miocene and Pliocene--Silicic volcanic rocks associated with the Snake River basalt (welded tuffs and flows of rhyolitic appearance).

Small remnants of the silicic volcanic rocks cap many of the hills in the vicinity of the Fall Creek area. Radiometric tests with a scintillometer indicate that these volcanic rocks are mildly radioactive.

FALL CREEK COAL PROSPECT

Introduction

The Fall Creek coal prospect is an adit which extends about 83 ft down the dip of a coal bed in the

Bear River formation (fig. 4A). The prospect was dug about 30 years ago by J. H. Smith of Rigby, Idaho. He reports that he went down the dip of the coal bed for a distance of about 98 ft and ceased operations when he reached water. Good timbering and a solid roof have helped to preserve the opening, though the floor of the mine and the lower 15 ft of the opening are covered with rubble. Plate 1A is a diagrammatic longitudinal section of the adit.

Structure

The adit was driven in the coal bed, on the northeast limb of a faulted anticline (fig. 2). The beds dip about 33° NE., and the axes of the major structural features trend northwest. The anticline is faulted along the axis of the fold dropping the Wayan formation down on the southwest against the Bear River formation. Erratic dips in the surrounding area may indicate that the structure is more complex than suggested here. The coal forms a thin zone of incompetent strata which has been sheared by differential movement between the overlying and underlying competent beds, and is characterized by drag folds as shown on plate 1A. Clay and shale pods have been dragged into the coal so that the quality of the coal is too poor to make a commercial coal mine.

Sedimentary rocks

A stratigraphic section was measured beginning in the creek bottom below the adit and extending northeastward in the direction of dip through the coal horizon. This section is shown graphically in figure 3 and corresponds to the following description:

Stratigraphic section of the upper part of the Bear River formation and the lower part of the Wayan formation, measured at the Fall Creek entry about 16 miles southwest of Swan Valley in Bonneville County, Idaho

	Thickness Ft.	Thickness In.
Wayan formation:		
Unit 1. Sandstone, light gray, medium-grained, thin- to thick-bedded, cross-bedded; forms prominent ledge	23	
2. Covered; probably contains red shale; forms slope	106	
3. Sandstone, bluish-gray, fine- to medium-grained	2	
4. Covered; probably contains red shale; forms slope	34	
5. Sandstone, bluish-gray, fine-grained	5	
6. Covered; probably contains red shale; forms slope	108	
7. Sandstone, greenish-gray, fine-grained	4	
8. Covered; probably contains red shale; forms slope	13	
9. Sandstone, light gray, fine- to medium-grained, friable; forms ledge locally	10	
10. Sandstone, light gray, fine- to medium-grained, cross-bedded, thin-bedded, slightly friable; forms ledge; the lower 6-8 in. contains a siltstone pebble conglomerate	6	
11. Covered with reddish soil; probably red shale; forms slope	75	
Total Wayan formation (measured)	386	
Bear River formation:		
Unit 12. Quartzite, greenish-gray to gray, fine-grained to dense	6	
13. Covered; probably shale, green, not fissile	20	
14. Shale, greenish- to purplish-gray, not fissile; forms slope	20	
15. Covered by road fill; probably shale, green, not fissile	25	
16. Limestone, carbonaceous, black, weathers gray, dense to finely crystalline, radioactive; contains fossil fragments including smooth gastropod shells	4	6
17. Shale, carbonaceous, dark greenish-gray	0	4
18. Limestone, carbonaceous, fossiliferous; fresh fragments give off fetid odor; radioactive	1	3
19. Clay gouge; radioactive	0	6
20. Coal, clay and thin limestone lenses; sheared; highly radioactive	4	
21. Limestone, carbonaceous, and shale, carbonaceous; radioactive	1	
22. Quartzite, greenish-gray to brown, fine-grained; forms ledge	4	
23. Covered slope-forming unit; probably gray, fissile shale	15	
24. Limestone, impure, dark brown, weathers brown, dense to finely crystalline; fresh fragments give off a fetid odor; contains fossil fragments including smooth gastropod shells	0	8
25. Covered, slope-forming unit; probably gray, fissile shale	15	
26. Quartzite, greenish-gray to brown, fine-grained; cross-bedded in part; forms massive ledge. The lower part of the Bear River formation is not exposed	35	
Total Bear River formation exposed (measured)	152	5

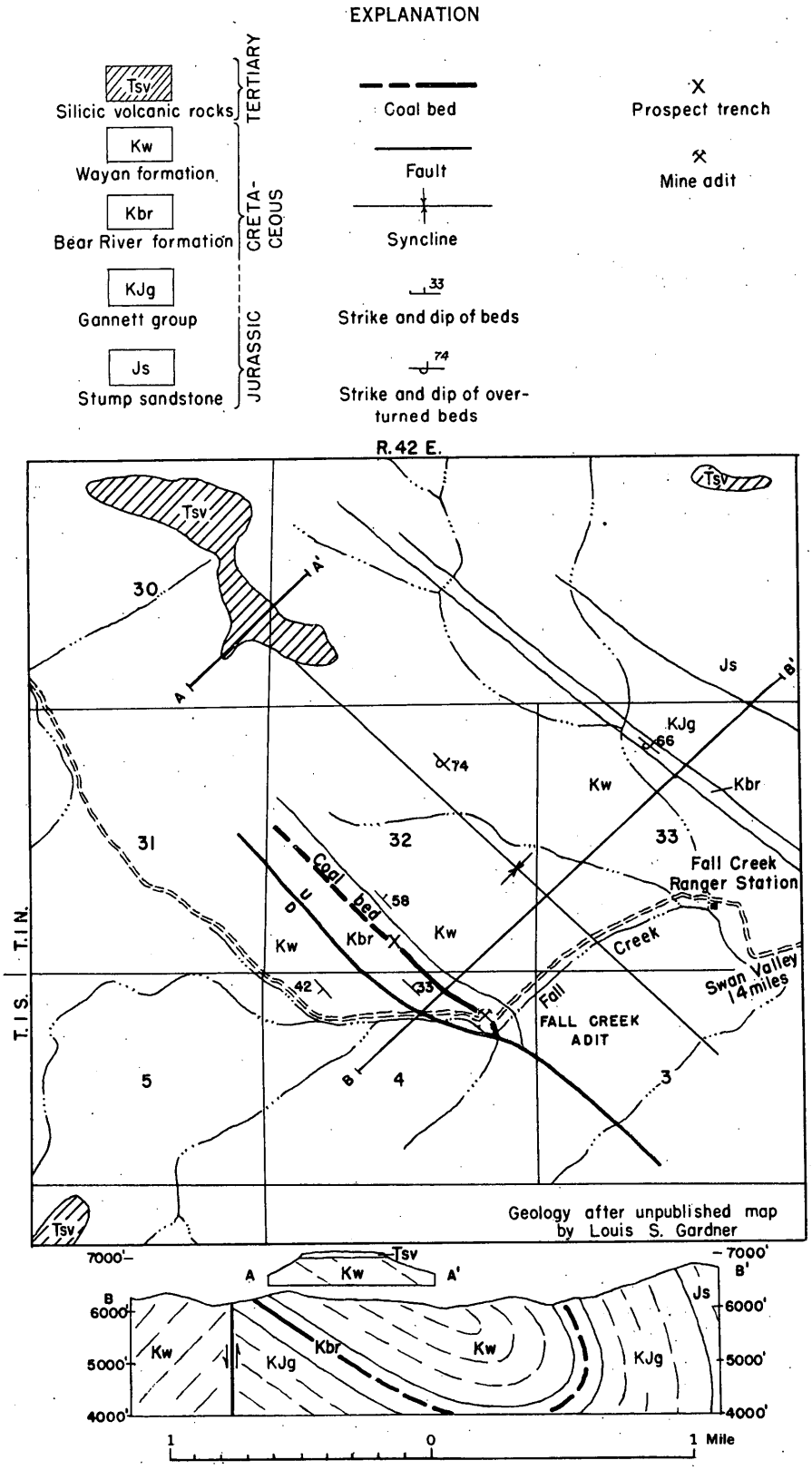


Figure 2.--Geologic sketch map of the Fall Creek area, Bonneville County, Idaho.

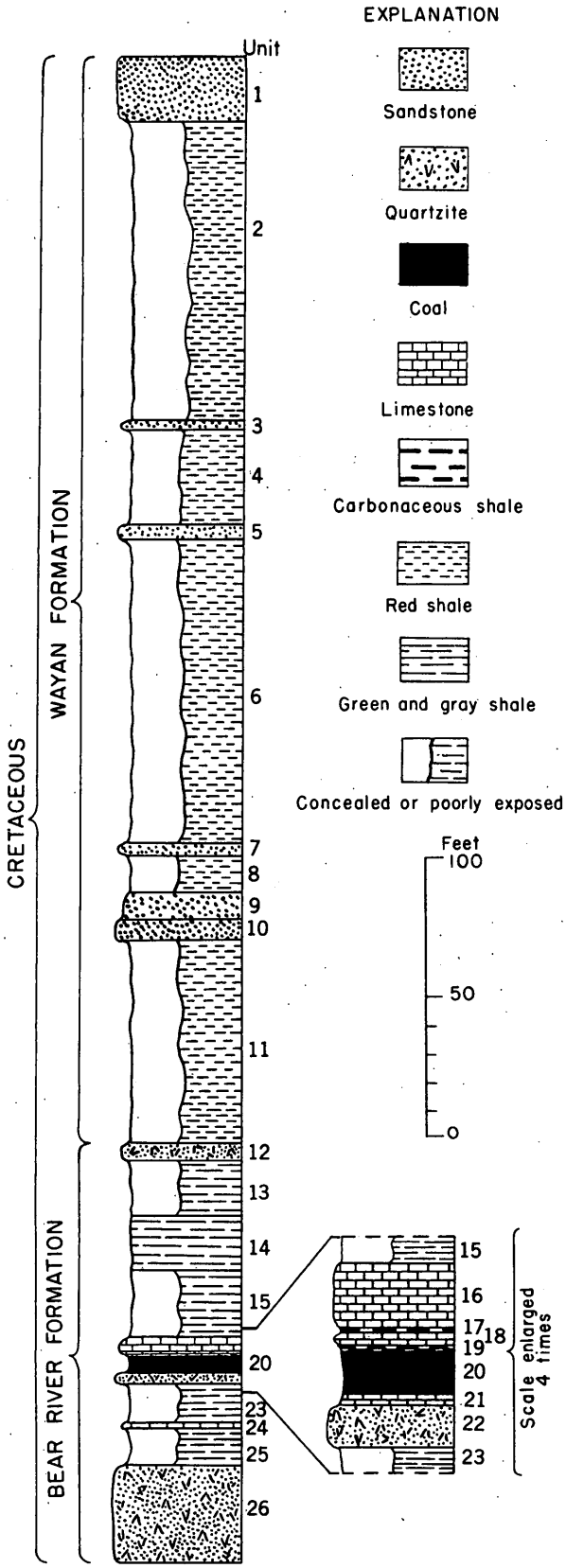


Figure 3.--Stratigraphic section of the upper part of the Bear River formation and the lower part of the Wayan formation as measured at the Fall Creek adit.

Carbonaceous beds in the upper part of the Bear River formation contain uranium (fig. 4B). Units 16, 17, and 18 may be considered together as a limestone unit with a thin shale parting which overlies the coal and forms the roof of the entry. The limestone is black and carbonaceous, contains fossil fragments including smooth gastropod shells, and gives off a fetid odor when crushed. Cavernous joints are visible in the roof of the entry, indicating solution by circulating ground water. Unit 19, immediately below the limestone and separating it from the underlying coal, is a unit of varying thickness and lithology. It consists of clay gouge, carbonaceous shale, lenses of carbonaceous limestone, and thin lenses of dense black brittle coal with a bright luster. The shear planes in this unit are parallel or nearly parallel to the bedding of the overlying limestone. The thickness of this unit ranges from about 4 in. to 2 ft. Directly underlying unit 19 is the coal bed, unit 20. The coal is highly distorted and is characterized by shear planes rather than bedding planes. As a result of this distortion the coal contains a considerable quantity of yellow and gray clay and carbonaceous limestone, which has been dragged into the coal bed to form lenses and pods parallel to the shear planes. Directly below the coal horizon is unit 21, which is similar to unit 19 above the coal. Exposures of this unit were poor because of the quantity of rubble on the floor of the opening. It consists of carbonaceous shale, lenses of clay, lenses of dense black brittle coal, and, at the bottom, an impure bed of carbonaceous limestone. The shear planes in this unit are wavy but tend to parallel the bedding.

Uranium-bearing coal, carbonaceous shale, and carbonaceous limestone

Radioactivity was detected first at the mouth of the Fall Creek prospect. Further investigation showed that all the carbonaceous beds, units 16, 17, 18 18, 19, 20, and 21, were radioactive. Three preliminary samples, Nos. 1, 2, and 3 were collected for prompt analysis. Other samples for analysis were collected from a section normal to the dip of the strata at the mouth of the entry and from similiar sections at 10-ft intervals along the length of the opening. Forty-eight samples were collected from eight sections in order to obtain data representative of the mine. This information is summarized in table 1, which shows the variation of uranium content in samples collected from different places in the opening. The same information is shown graphically on plate 1A and B.

In general, mineralization is greatest at or near the top of the coal bed, unit 20. Mineralization diminishes downward through the coal and the carbonaceous shale below the coal. It also diminishes upward through the overlying carbonaceous shale and limestone. A relatively high concentration of uranium, 0.053 percent uranium in the coal and 0.31 percent uranium in the ash in sample No. 2, was found in one of the lenses of dense black brittle coal in the zone of gouge immediately above the main coal horizon. Unfortunately there is only a small quantity of such material in the prospect. The average uranium content in the top 1 foot of coal is about 0.045 percent in the coal and 0.082 percent in the ash. It is interesting to note that the grade increases toward the lower portion of the opening, and that the average for the top of the coal in the last two sections is 0.110 percent

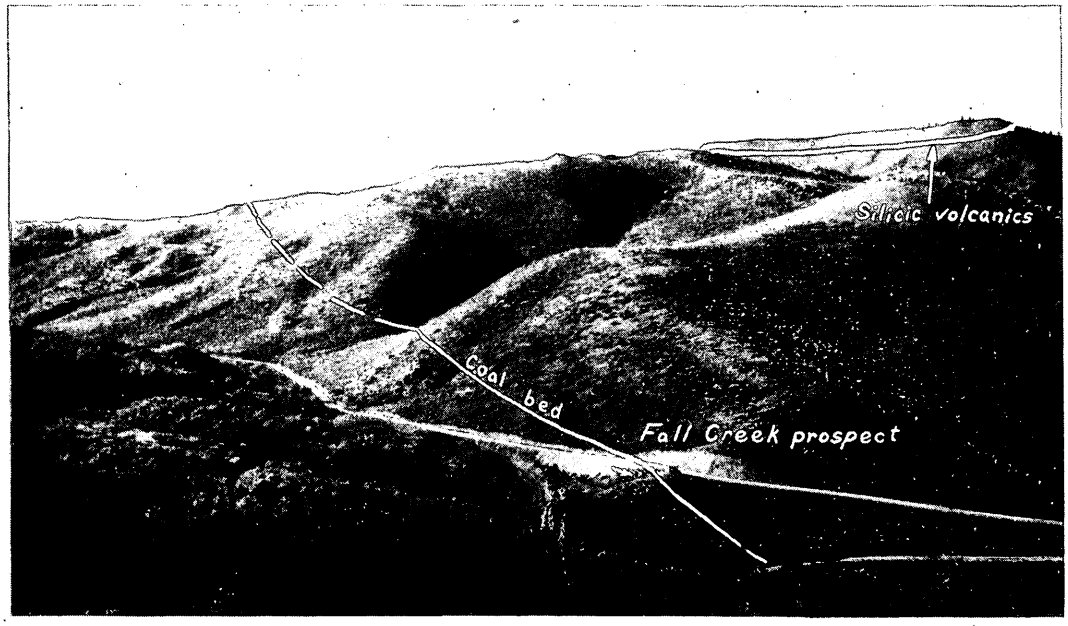


Figure 4 A. --View of Fall Creek coal prospect, showing position of entry and trace of coal bed with relation to road and surrounding hills.

Figure 4 B. --Interior view of Fall Creek coal prospect, taken 50 ft from portal showing stratigraphic sequence of mineralized beds and percent uranium in the sample.

Table 1.--Analyses of samples collected from the Fall Creek coal prospect

[U, uranium; eU, equivalent uranium]

Sample number	Lab. No.	eU (percent)	Ash (percent)	U in Ash (percent)	U in sample (percent)	Sample description
Preliminary samples, Nos. 1-3, collected about 35 ft from portal, Sept. 13, 1951						
1.	52040	0.064	43.9	0.090	0.040	Grab sample sheared coal.
2.	52041	.10	17.3	.31	.053	Grab sample vitreous coal.
3.	52042	.020	77.5	.013	.010	Channel sample 4 ft sheared coal.
Comprehensive suite of samples, Nos. 4-51, collected from vertical sections stationed at 10-ft intervals from portal on Sept. 24, 1951						
Samples collected from station at portal						
4.	66874	0.002	----	----	0.001	3 in. shale above limestone.
5.	66873	.027	----	----	.024, .021	15 in. carbonaceous limestone above coal.
6.	66861	.019	84.8	0.018	.015, .014	2 in. carbonaceous shale, limestone, and coal.
7.	66862	.011	78.8	.014	.011	Top 1¼ ft sheared coal.
8.	66863	.013	74.6	.025	.019, .023	Next 1¼ ft sheared coal.
9.	66864	.009	77.5	.016	.012, .013	Bottom 1¼ ft sheared coal.
10.	66865	.007	----	----	.007	6 in. carbonaceous limestone.
11.	66866	.004	----	----	.003	6 in. carbonaceous shale and clay.
Samples collected from station 10 ft from portal						
12.	66867	0.021	77.5	0.029	0.022	4 in. carbonaceous shale.
13.	66868	.011	69.4	.018	.012	Top 1 ft sheared coal.
14.	66869	.017	71.5	.027	.019, .020	Next 1 ft sheared coal.
15.	66870	.009	73.0	.022	.016	Next 1 ft sheared coal.
16.	66871	.005	72.6	.006	.004	Bottom 1 ft sheared coal.
17.	66872	.004	72.8	.007	.005	Carbonaceous shale and clay.
Samples collected from station 20 ft from portal						
18.	66875	0.012	----	----	0.013	Carbonaceous limestone and shale.
19.	66876	.035	61.3	0.066	.040	Top 1 ft sheared coal.
20.	66877	.006	71.8	.011	.008	Next 1 ft sheared coal.
21.	66878	.009	73.4	.015	.011	Next 1 ft sheared coal.
22.	66879	.005	77.9	.007	.005	1 ft clay and carbonaceous shale.
23.	66880	.004	69.3	.008	.006	1 ft clay, carbonaceous shale, and limestone.
Samples collected from station 30 ft from portal						
24.	66881	0.024	----	----	0.025, .028	1 ft carbonaceous shale and clay.
25.	66882	.008	72.0	0.014	.010	Top 1 1/3 ft sheared coal.
26.	66883	.006	68.3	.011	.008	Next 1 1/3 ft sheared coal.
27.	66884	.007	69.7	.014	.010	1 1/3 ft sheared coal.
28.	66885	.007	74.4	.009	.007	15 in. sheared coal, shale, and limestone.
Samples collected from station 40 ft from portal						
29.	66886	0.026	----	----	0.029, .032	6 in. carbonaceous shale and clay.
30.	66887	.028	70.8	0.044	.031	10 in. carbonaceous limestone and vitreous coal.

Table 1.--Analyses of samples collected from the Fall Creek coal prospect--Continued

Sample number	Lab. No.	eU (percent)	Ash (percent)	U in Ash (percent)	U in sample (percent)	Sample description
Samples collected from station 40 ft from portal--Continued						
31.	66888	0.021	72.3	0.033	0.024	Top 1 1/3 ft sheared coal.
32.	66889	.006	74.6	.010	.007	Next 1 1/3 ft sheared coal.
33.	66890	.018	71.4	.030	.021	Next 1 1/3 ft sheared coal.
34.	66891	.005	78.2	.009	.007	1 1/3 ft coal, carbonaceous shale, and limestone.
Samples collected from station 50 ft from portal						
35.	66892	0.026	----	----	0.028, .030	1 ft carbonaceous shale and limestone.
36.	66893	.025	----	----	.027	8 in. carbonaceous limestone, shale, and vitreous coal.
37.	66894	.033	60.4	0.066	.040	Top 1¼ ft sheared coal.
38.	66895	.007	66.0	.013	.009	Next 1¼ ft sheared coal.
39.	66896	.005	70.8	.010	.007	Next 1¼ ft sheared coal.
40.	67239	.006	70.8	.008	.006	1 ft coal and clay.
Samples collected from station 60 ft from portal						
41.	67240	0.016	----	----	0.018, .020	8 in. carbonaceous shale.
42.	67241	.018	----	----	.022	15 in. carbonaceous limestone.
43.	67242	.096	43.7	0.30	.131	Top 1¼ ft sheared coal.
44.	67243	.025	66.2	.044	.029	Next 1¼ ft sheared coal.
45.	67244	.006	75.9	.010	.008	Next 1¼ ft sheared coal.
46.	67245	.007	77.4	.009	.007	Bottom 1¼ ft sheared coal.
Samples collected from station 75 ft from portal						
47.	67246	0.003	----	----	0.003	4 in. carbonaceous shale.
48.	67247	.010	----	----	.011	17 in. carbonaceous limestone.
49.	67248	.064	58.4	0.145	.085, .089	Top 1.1 ft sheared coal.
50.	67249	.007	64.9	.009	.006	Next 1.1 ft sheared coal.
51.	67250	.008	72.4	.012	.009	Next 1.1 ft sheared coal.
Sample from dump of abandoned prospect half a mile northwest of portal						
52.	66858	0.066	37.0	0.22	0.08	Coal fragments.

uranium in the coal and 0.222 percent uranium in the ash.

No other exposures of the coal bed were found along its strike. The hills in this area are covered by thick soil and colluvium, and only the most resistant beds crop out (fig. 4A). Fragments of radioactive carbonaceous limestone were found within half a mile northwest of the adit. A trench 3-5 ft deep and 20 ft long was dug adjacent to a caved and abandoned coal prospect about half a mile northwest of the adit in an attempt to uncover an exposure of the coal, but bedrock was not found. Enough small chunks of coal, however, were gathered from the dump of the abandoned coal prospect to fill a quart container. These fragments analyzed 0.08 percent uranium in the sample, 37 percent ash, and 0.22 percent uranium in the ash. This substantiates the belief that the uranium-bearing coal bed extends for at least half a mile along the strike northwest of the main adit.

Mineralogy

No uranium minerals have been identified by this field study of the coal, carbonaceous shale, or carbonaceous limestone even though the analyses indicate a comparatively large quantity of uranium. Tolmachev (1943) has shown in his experiments on the adsorption of uranyl nitrate by activated carbon and carbonaceous shales that after the adsorption had taken place the amount of nitrate in the solution remained the same, but the amount of uranyl ion diminished. This suggested to him that the uranyl ion was adsorbed between the graphitic layers of carbonaceous material. A similar mechanism may explain why the uranium-bearing coal in the Fall Creek area contains no megascopically detectable uranium minerals. That is, the uranium may be present in the ionic state, adsorbed by carbonaceous material.

Origin

It seems fairly evident that the carbonaceous material is in some way responsible for the localization of the ore, whether it be due to ionic adsorption or some other mechanism such as chemical reduction, because the uranium is associated with beds of several different lithologies which have but one common factor, a high content of carbon. Carbonaceous beds near the top of the carbonaceous zone are the most intensely mineralized and below the top foot of coal the uranium content diminishes rapidly downward. This is interpreted as meaning that the mineralization was effected by downward percolation of solutions bearing uranium ions and that the ions were held by adsorption by the first carbonaceous material which they encountered. The diminishing amount of uranium in the lower part of the coal bed, therefore, could indicate that few ions were able to penetrate so far before being absorbed.

Silicic volcanic rocks cap several of the hills in the vicinity of the Fall Creek coal prospect and are mildly radioactive. Analysis of a sample of the volcanic rock gave 0.004 percent equivalent uranium but less than 0.001 percent uranium. The areal pattern formed by the exposures of the silicic volcanics suggests that they once blanketed the entire surrounding area. Such a large mass of mildly radioactive rock can readily be imagined as the source for the uranium in the coal. Meteoric waters percolating through the source rock could take small quantities of uranium in solution and later deposit it under the proper physical and chemical environment such as was provided by the coal and carbonaceous material. A similar mechanism has been suggested for the source of the uranium in certain lignites in the Dakotas (Denson and others, 1950).

In trying to reconstruct the sequence of events which led to the mineralization of the coal in the Fall Creek area the fact that at least 650 ft of sediments separate the coal from the overlying silicic volcanics must be explained. These intervening sediments contain red and green shales, sandstones, and quartzites which are relatively impervious for the circulation of ground water. However, the fault which offsets the axis of the anticline and passes no more than several hundred feet south of the Fall Creek prospect may have provided a conduit which facilitated the circulation of ground water. Ground water solutions may have left the fault to continue down the dip of the cavernous limestone which overlies the coal and thus enter the coal horizon from above. The average of the analyses of samples from the various sections indicates higher uranium content for some sections than for adjacent sections. This more intense mineralization may be due to the solutions being introduced through an open joint in the limestone above that section.

Geologic features believed to be significant in the localization of uranium in the Fall Creek area are: (1) the mildly radioactive silicic volcanic rocks, which could have been a source of mineralizing meteoric waters; and (2) the coal, carbonaceous limestone, and carbonaceous shale below the volcanic rocks, which now hold the uranium that was introduced by percolating meteoric water.

REFERENCES CITED

Denson, N. M., Bachman, G. O., and Zeller, H. D., 1950, Summary of new information on uraniferous lignites in the Dakotas: U. S. Geol. Survey Trace Elements Mem. Rept. 175.

Gardner, L. S., Unpublished manuscript maps, Hell Creek quadrangle, Bonneville County, Idaho: U.S. Geol. Survey.

Kirkham, V. R. D., 1924, Geology and oil possibilities of Bingham, Bonneville, and Caribou Counties, Idaho: Idaho Bur. Mines and Geology Bull. 8.

Mansfield, G. R., 1920, Coal in eastern Idaho: U.S. Geol. Survey Bull. 716-F, pp. 123-154.

Ross, C. P., and Forrester, J. D., 1947, Geologic map of the State of Idaho: U.S. Geol. Survey and Idaho Bur. Mines and Geology.

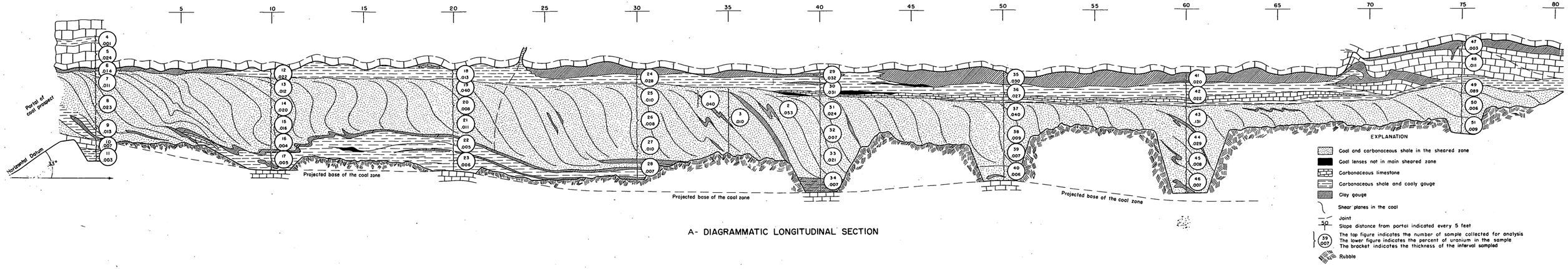
Slaughter, A. L., and Nelson, J. M., 1946, Trace Elements reconnaissance in South Dakota and Wyoming, preliminary report: U. S. Geol. Survey Trace Elements Inv. Rept. 20.

Staatz, M. H., and Bauer, H. L., 1951, Uranium-bearing lignite beds at the Gamma property, Churchhill County, Nevada: U. S. Geol. Survey Trace Elements Mem. Rept. 226.

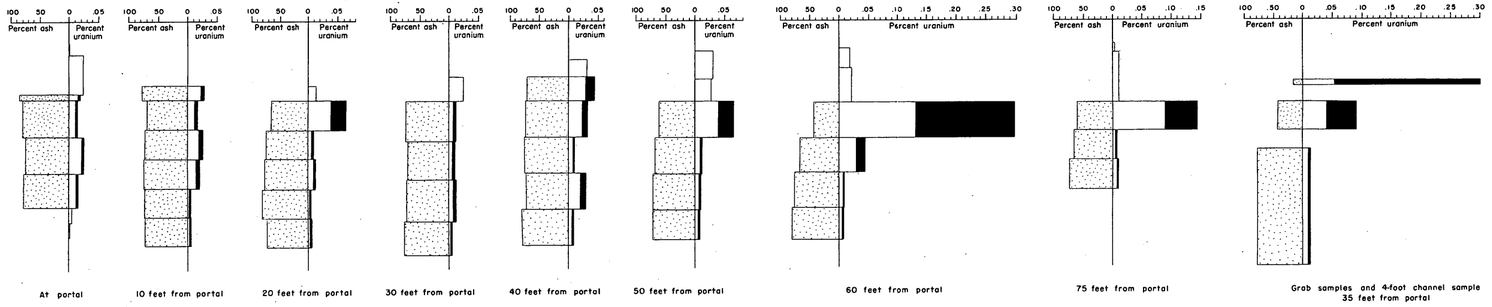
Tolmachev, I. M., 1943, Adsorption of uranyl salts on solid adsorbents: U. S. S. R. Acad. Sci. Bull. 1, pp. 28-34.

Wyant, D. G., Sharp, W. N., and Sheridan, D. M., 1951, Uranium deposits in the Red Desert of the Great Divide Basin, Sweetwater County, Wyoming: U. S. Geol. Survey Trace Elements Inv. Rept. 122.

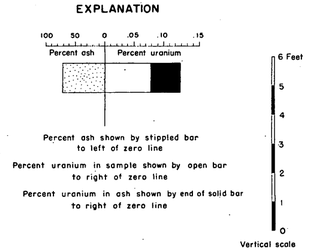
INT.-DUP. SEC., WASH., D.C. 29831



A- DIAGRAMMATIC LONGITUDINAL SECTION



B- PERCENT URANIUM AND ASH SAMPLES



GRAPHS OF RELATIONS AT THE FALL CREEK COAL PROSPECT, BONNEVILLE COUNTY, IDAHO

1 0 10 Feet
Horizontal and vertical scale

UNITED STATES
DEPARTMENT OF THE INTERIOR
~~BUREAU OF MINES~~
~~224 NEW CUSTOMHOUSE~~
~~DENVER 2, COLORADO~~

OFFICIAL BUSINESS

PAYMENT OF POSTAGE, $300
(PMGC)

Defense Minerals Exploration Administration

Interior Building

Washington 25, D. C.