DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4684

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments (latest on top)
Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
Leases and assignments of leases
✓Application and attachments
(3) Envelope for maps

Right Side

Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report (Tab)
Operator's Final Report
(2R) Interim Reports
(2R) Operator's monthly reports and all attachments (latest on top)
✓On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order) Interim Summary Reports by W. O. Engineers

Right Side

Operator's Semi-Annual Report for Certified Project, Field Team Interim Reports, Operator's Monthly Report with transmittal, narrative, maps, and Field Team review.

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

March 12, 1957

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RECEIVED MAR 14 1957

DATE	INITIALS	CODE

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium and Selenium) Selenium Corporation of America (Poor Richard, Quarterhorse, Tall Indian and Copper Coyote Claim Groups) Fremont County, Wyoming

Enclosed are the original and two copies of the subject application. One copy is being retained in our file.

The applicant proposes a project consisting of 16,000 feet of drilling in 163 holes at an estimated cost of $26,400.00.

The proposed drilling program appears to be based entirely on the results of radiometric and geochemical surveys.

DMEA Field Team, Region III

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosures

SELENIUM CORPORATION OF AMERICA
2040 COMMERCE BUILDING
HOUSTON 2, TEXAS

TELEPHONE:
CAPITOL 4-1724

March 8, 1957

DMEA
DEPARTMENT OF THE INTERIOR
MAR 11 1957
REGION III
DENVER, COLORADO

Executive Officer
DMEA Field Team, Region No. 3
224 New Customhouse
Denver 2, Colorado

Dear Sir:

Enclosed please find our application for loan, submitted in quadruplicate, with all exhibits in quadruplicate copies.

We have endeavored to give only the pertinent facts and are definitely certain that the information included is all correct.

It is our understanding that a field inspection of the property will be made by a team assigned to this project from your office. When this team is ready to make this inspection, we feel that it would be helpful for them to contact Mr. John D. Sargent, 150 North Beech Street, Casper, Wyoming, telephone 3-7947. Mr. Sargent has supervised for us all of the exploration work which has been done on this property. If you would call us collect at CApitol 4-1724, Houston, Texas, we will contact Mr. Sargent and arrange for him to meet the inspection party from your office, either in the field or at his office in Casper, Wyoming.

We are extremely anxious to get this program under way and respectfully request your most prompt action. In the event any further information is needed, please do not hesitate to call us collect at CApitol 4-1724, Houston, Texas, and we will do our best to provide such information.

Respectfully yours,

SELENIUM CORPORATION OF AMERICA

By: [signature]
Chairman of the Board

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RSR:MS
Enclosures

cc: - Mr. John D. Sargent
150 North Beech Street
Casper, Wyoming

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DMEA
DEPARTMENT OF THE INTERIOR
MAR 11 1957
REGION III
DENVER, COLORADO

RECEIVED
MAR-14-1957
D.M.E.A.

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. 4684
Metal or Mineral Uranium-Selenium
Date Received 3/14/57
Estimated Cost $26,400.00
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: Selenium Corporation of America, 2040 Commerce Building, Houston 2, Texas, incorporated State of Delaware; R. S. Randerson; ~~President and~~ Chairman of Board, Tom Scoggins, Vice-President; H. D. Atherton, Secretary.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Poor Richard Claims (Nos. 1 - 18); Quarterhorse Claims (Nos. 3 - 14); Tall Indian Claims (Nos. 1 - 14); Copper Coyote Claims (Nos. 1 - 20).
See Enclosure No. 1

(*b*) State any mine name by which the property is known. Lysite Area, Fremont County, Wyoming.

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

(*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.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See Enclosure No. 1

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 Enclosure No. 2.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. Enclosure No. 2.

(*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 Enclosure No. 2.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See Enclosure No. 2

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

See Enclosure No. 2

16—66551-1

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

(*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 Enclosure No. 3

(*c*) The work will start within 30 days and be completed within 4 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Enclosure No. 3.

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 Enclosure No. 4

(*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. Enclosure No. 4

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. Enclosure No. 4

(*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. Enclosure No. 4

(*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. Enclosure No. 4

(*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. Enc. No. 4

(*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. Enclosure No. 4

(*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. Enclosure No. 4

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?

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

Explain in detail on acompanying paper.

See Enclosure No. 5

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 8, 1957

SELENIUM CORPORATION OF AMERICA
(Applicant)

By [signature]
President
Chairman of the Board

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

Selenium Corporation of America, 2040 Commerce Bldg., Houston 2, Texas

3. The following Claims of SELENIUM CORPORATION OF AMERICA are recorded in the Mining Records of the County Clerk and Ex-Officio Register of Deeds of Fremont County, Wyoming, on the pages and in the books shown below:

POOR RICHARD CLAIMS

Claim No.	Book No.	Page No.
1	91	172
2	91	173
3	91	174
4	91	175
5	91	176
6	91	177
7	91	178
8	91	179
9	91	180
10	91	181
11	91	182
12	91	183
13	91	184
14	91	185
15	91	186
16	91	187
17	91	188
18	91	189

QUARTERHORSE CLAIMS

3	91	192
4	91	193
5	91	194
6	91	195
7	91	196
8	91	197
9	91	198
10	91	199
11	91	200
12	91	201
13	91	202
14	91	203

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TALL INDIAN CLAIMS

1	91	204
2	91	205
3	91	206
4	91	207
5	91	208
6	91	209
7	91	210
8	91	211

ENCLOSURE NO. 1

TALL INDIAN CLAIMS, CONT.

Claim No.	Book No.	Page No.
9	91	212
10	91	213
11	91	214
12	91	215
13	91	216
14	91	217

COPPER COYOTE CLAIMS

1	91	167
2	91	168
3	91	169
4	91	459
5	91	460
6	91	461
7	91	462
8	91	463
9	91	464
10	91	465
11	91	466
12	91	467
13	91	468
14	91	469
15	91	470
16	91	471
17	91	472
18	91	473
19	91	474
20	91	475

A certified copy of the surveyor's plat of the above claims is included in the enclosed folders.

The metes and bounds descriptions of the above claims are lengthy and would add many pages of additional typing, so that we trust the above description will be sufficient. However, if the metes and bounds description of each claim is required, we can and will furnish upon request.

ENCLOSURE NO. 1

4. (a) See enclosed folders.

(b) No mining has even been conducted on these claims.

(c) Exploration is desired on these properties to determine whether the radiometric and geochemical anomalies that have been discovered on these claims are indicative of economic ore; and, if so, to determine the tonnage and grade of mineable ore of either uranium or selenium, or both. Geological reports and maps are included in the accompanying folders.

(d) The claims are readily accessible from Lysite to the Southeast, or from Bonneville to the West, or from Thermopolis to the North by maintained roads. The claims are crossed by the Lysite to Thermopolis road, a gas pipeline road, a powerline road, and several seismic exploration roads. All portions of the claims can be reached by jeeps and power wagons. The claims are 8-1/2 miles Northwest of Lysite, Wyoming, and 1 mile South of the Fuller Air Strip.

(e) Manpower, materials, supplies, equipment, and power are readily available. No water of any kind exists on the claims. Drinking, cooking, and washing water can be obtained from a spring on the D. Fuller ranch, 2 miles away. Larger amounts of water would have to be trucked in.

Selenium Corporation of America, 2040 Commerce Bldg., Houston 2, Texas

5. (a) Uranium and Selenium.

(b) See maps in the folders and also the accompanying suggested drill pattern for drilling out the anomalies. It is proposed that holes be drilled to the water table on the 150-foot centers on and adjacent to the radiometric, selenium, and uranium anomalies. It is recommended that all drill holes be probed immediately upon completion of the drilling to avoid a radon gas buildup. Samples of the core and cuttings should be taken, packaged, and recorded from all of the footage drilled. All of the samples from radioactive zones should be assayed for both uranium and selenium. All samples from non-radioactive zones should be screened for selenium. All of the initial assays should be geochemical. Geochemical assays should be check by more exact titration methods in the more important areas as determined by the geochemical assays.

The water table should average 100 feet in depth. Should the water table average less than 100 feet in depth, the remaining footage should be drilled at additional drill hole locations to be determined by Mr. Sargent.

(c) The work will start within 30 days and be completed within 4 months from the date of an exploration project contract.

(d) R. S. Randerson, Chairman of the Board of Selenium Corporation of America, has been in the oil and/or mining business for approximately 30 years, during which time he drilled, or caused to be drilled, several hundred wells and owned and operated several oil fields.

Tom Scoggins, Vice-President of the Corporation, has been a member of the firm of Randerson & Scoggins for the past 6 years, The firm of Randerson & Scoggins has been engaged in the oil and mining business. The firm has a number of manganese mines in Chihuahua, Mexico, which they are presently operating.

The exploration work on the claims in Fremont County, Wyoming, owned by Selenium Corporation of America, has been done under the direction of Randerson & Scoggins, and on the ground the supervision of said exploration has been done for them by John D. Sargent, 150 North Beech Street, Casper, Wyoming.

Project Manager and Consulting Geologist will be John D. Sargent. Mr. Sargent has a B.A. and M.A. from the University of Buffalo, Buffalo, New York, He was Curator of Geology at the Buffalo Museum of Science for 4 years and employed by the Bureau of Mines for 3 years, prior to becoming a geological consultant. Mr. Sargent is the owner of Sargent Geochemical with offices and laboratories in Casper, Wyoming.

ENCLOSURE NO. 3

Selenium Corporation of America, 2040 Commerce Bldg., Houston 2, Texas

6. (a) Independent Contracts:

1.	16,000 Feet of drilling @ $0.75/ft.	$12,000.00
2.	Probing and logging at $0.15/ft.	2,400.00
3.	Sampling and packaging and labelling @ $0.10/ft.	1,600.00
4.	1,000 Geochemical Uranium Assays @ $1.50 ea.	1,500.00
5.	2,000 Geochemical Selenium Assays @ $1.00 ea.	2,000.00
6.	100 Umpire Uranium Assays @ $3.00 ea.	300.00
7.	200 Exact Selenium Assays @ $8.00	1,600.00
8.	Sample storage for 4 months @ $25.00/Mo.	100.00
9.	Surveying in the drill sites	400.00
	TOTAL INDEPENDENT CONTRACTS	$21,900.00

(b) John D. Sargent, Project Manager and Geological Consultant, 3 Months @ $1,000.00/Mo. $ 3,000.00

(c) All costs for operating materials and supplies are to be included in Independent Contracts 6 (a).

(d) All operating equipment is to be included in Independent Contracts 6 (a).

(e) All rehabilitation and repair costs are to be included in Independent Contracts 6 (a).

(f) All necessary new buildings, improvements, and installations are to be included in Independent Contracts 6 (a).

(g) All miscellaneous items are to be included in Independent Contracts 6 (a).

(h) Contingencies:

Allowance to be made available to reimburse drillers for drilling through hard limey rock layers that require core drilling $ 1,000.00

An additional $0.75/ft. for each foot of core drilling that is required should be allowed.

Allowance to expedite exploration in the event of equipment failure; accidents involving injury, death, or damage to equipment. Communications and transportation costs necessary to get work started again in such event with a minimum of delay could be paid from this. $ 500.00

TOTAL COST	$26,400.00
GOVERNMENT SHARE	19,800.00
SELENIUM CORPORATION OF AMERICA SHARE	$ 6,600.00

ENCLOSURE NO. 4

Selenium Corporation of America, 2040 Commerce Bldg., Houston 2, Texas

7. (b) It is our understanding that Selenium Corporation of America will bear one-fourth of the cost of this proposed project (or $6,600.00). We are capable of financing this project initially for a period of from 60 to 90 days, or until funds through DMEA are made available any time within this period.

ENCLOSURE NO. 5

SELENIUM CORPORATION OF AMERICA
2040 COMMERCE BUILDING
HOUSTON 2, TEXAS

TELEPHONE:
CAPITOL 4-1724

DMEA
DEPARTMENT OF THE INTERIOR
MAR 11 1957
REGION III
DENVER, COLORADO

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4 - 9	Geological Report by John D. Sargent, dated April 11, 1956.
10 - 11	Geological Report by John d. Sargent, dated November 27, 1956.
12	Map of 66 Claims of 20 acres each, owned by Selenium Corporation of America.
13 - 20	Maps prepared by John D. Sargent, referred to in his report of August 22, 1956.

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150 N BEECH ST
CASPER WYO

JOHN D. SARGENT
CONSULTANT GEOLOGIST

RARE METALS SPECIALIST · GEOCHEMICAL SURVEYS · ORE BLOCKING · ANOMALY MAPPING

August 22, 1956

Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

Gentlemen:

In February, 1956, you furnished me with a copy of a geologic report concerning the Selenium Corporation of America's claims in the Lysite Poison Draw area of Fremont County, Wyoming. This report was prepared by the Uranium Research and Development Company of Denver, Colorado in December, 1955. I prepared a supplementary report under date of April 11, 1956, on the Lysite claims with particular emphasis upon the possible modes of origin of selenium and a plan for further exploration on those claims.

During May, 1956, I was requested by you to do certain exploration work on your Lysite claims. The exploration work decided upon was the drilling of auger holes to alternating depths of 5' and 10' on 300' centers on all 65 lode claims. Composite samples of auger drill cuttings from each 5' section was individually packaged and the location and depth from which each sample obtained was marked on the package. An additional 1700 feet of close spaced drilling was completed on the west side of a volcanic tuff outcrop on the Quarter Horse #8, 10, 12 and 14 claims.

Each of the drill cutting samples was geochemically assayed for selenium and the results were plotted on a plat of the claims, a copy of which I am furnishing to you. Assays of the samples obtained from the close spaced drilling on Quarter Horse #8, 10, 12 and 14 claims revealed a high intensity selenium anomaly extending from the center of Quarter Horse #12 to the southern margin of Quarter Horse #8, a distance of some 1500'. The exact width of this anomaly has not been determined. These findings confirm the reports by the U. S. Bureau of Mines, the U. S. Geological Survey and the Wyoming Board of Natural Resources of exceptionally high selenium content in the soils and volcanic ash formations in this area. Also our negative assays from similar tuffs and soils from areas surrounding the selenium anomaly confirm the negative results obtained by the U. S. Bureau of Mines in drilling and assaying in areas outside of the selenium anomaly. Approximately 60 samples of the tuff formations assayed by the Bureau of Mines for the General Services Administration supplemented by approximately 300 assays I made of samples obtained

inside the selenium anomaly indicate the possibility that several lenses of mineable grade selenium ore can be blocked out on these claims. Additional drilling, sampling and assaying is recommended to determine the size and grade of these deposits.

In view of the frequent association between selenium and uranium in Wyoming, I recommended a radiometric survey of the claims. In July, 1956, at your request, I conducted the radiometric survey and prepared a radiometric anomaly map of my findings, copy of which has been furnished to you. The results of the radiometric survey were most gratifying in that of the five radiometric anomalies detected, one large anomaly coincided with a large selenium anomaly on Tall Indian #1 claim, and one smaller radiometric anomaly at the common corner of Quarter Horse #2, 3 and 4 claims coincided with a selenium anomaly in the same area. I consider this correlation to be significant and favorable as a guide to ore. In an endeavor to discover if the remaining radiometric anomalies were in any way related to the large selenium anomaly in the Quarter Horse #8, 10 and 12 area, I recommended that a heavy metals assay be conducted on each of the auger drill samples. The assays were made and the results were plotted on a plat of the claims. A copy of the resulting heavy metal anomaly map has been furnished to you. Unfortunately no significant pattern of heavy metals mineralization was revealed.

In addition to the selenium and uranium potentialities of these claims there is also a manganese deposit situated in the southern corner of the Poor Richard group of claims which warrants further exploration. Grab samples taken from the outcrop of this deposit assayed in excess of 5% manganese. Of lesser importance are gem grade agates found on the property and the possibilities of bentonite and aluminum ore as by products of processing the volcanic tuff for selenium and uranium values.

Based on the foregoing findings, I consider your claims to have excellent economic potentialities and recommend the following additional exploration to prove up these potentialities:

1.- Additional close spaced radiometric readings in the radioactive areas should be taken and recorded.

2.- Additional closely spaced samples from within the selenium anomalies should be taken, assayed and plotted.

3.- Rotary air drilling of the significant radiometric anomalies and selenium anomalies should be undertaken. Samples should be collected in a cyclone dust collector and assayed for selenium.

4.- Drill holes should be drilled to the water table and radiometrically probed. Samples from radioactive zones should be assayed for uranium. Holes still in mineralized zones when the water table is encountered should be extended down to and below the water table. To reach the water table and below, it is estimated the depth will vary from 50' to 200', and the cost of $1.00 to $3.00 per foot.

It is very difficult, if not impossible, to accurately estimate the total cost of completing the above suggested program; however, it could equal or substantially exceed the estimate of $50,000.00 to $100,000.00 made in my April 11th report.

CONCLUSION:

The exploration program just completed by me for you, as hereinabove outlined, has in my opinion developed invaluable information and data with regard to the presence of both selenium and uranium in potentially commercial quantities. The discoveries made, as hereinabove outlined, in my judgment certainly warrant and justify further detailed and concentrated exploration with a view to actually blocking out ore bodies as above recommended. Further sampling and exploration is also justified in determining the economic possibilities of the manganese on these claims. I regard the results of the exploration work I have just finished as highly gratifying.

Respectfully submitted,

John D. Sargent

JOHN D. SARGENT
GEOLOGIST

150 N. BEECH ST.
CASPER, WYO

JOHN D. SARGENT
CONSULTANT GEOLOGIST

RARE METALS SPECIALIST | GEOCHEMICAL SURVEYS | ORE BLOCKING | ANOMALY MAPPING

April 11, 1956

Supplementary Report on the Geology and Economics of Your Mining Claims in the Lysite, Wyoming Area.

Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

Gentlemen:

This report is made after thoroughly checking the area on the ground hereinafter referred to, and from a very careful study of previous reports and data made available to your corporation by Governmental agencies.

LOCATION AND ACCESSIBILITY

Your claims are located about 8-1/2 miles Northwest of Lysite in an area of abnormally high concentration of Selenium, which is situated on a branch line of the Chicago-Burlington and Quincy Railroad. Lysite is a settlement located about 15 miles North of U. S. Highway 20, and is reached by leaving the highway at Moneta. There is a graded road from the highway to a point very close to your claims. From this graded road there is a light and power company service road which goes through your claims so that the entire area is quite accessible. The claims consist of four groups:

(1) Poor Richard (18 claims) in Sections 2, 3, and 11, T. 39 N., R. 91 W.;
(2) Quarterhorse (14 claims) in Sections 2 and 3, T. 39 N., R. 91 W.;
(3) Tall Indian (14 claims) in Section 2, T. 39 N., R. 91 W. and Section 35, T. 40 N., R. 91 W.; and
(4) Copper Coyote (20 claims) in Sections 26, 27, 34 and 35, T. 40 N., R. 91 W.

TOPOGRAPHY AND CLIMATE

The claims are in an area which is characteristic of this part of Wyoming - moderate relief and low rolling hills. The elevations range from 5,000 to 5,600 feet. Vegetation is very light. The exposures of tuff do not support any vegetation.

The summers are hot and dry and more or less arid, and the winters are rather severe.

CATEGORIES OF SELENIUM OCCURRENCE AT LYSITE

1. Volcanic ash frequently contains selenium in concentrations of 1 to 20 parts per million. Upon weathering this selenium is released and is either washed away, concentrated in place, or redeposited at some new locality. Enough volcanic ash has been eroded away from the Lysite tuff deposits to account for the high concentrations of selenium that have been recorded from this area. The high bentonite content (50 to 85%) would be more than sufficient to keep rainwater and runoff from leaching the tuffs and carrying away the selenium. This then is a definite possibility of mode of occurrence of the concentrations of selenium noted at Lysite.

2. Volcanic gases frequently contain high concentrations of selenium. Rain accompanying volcanism washes selenium from the atmosphere and could deposit selenium in ponds resulting from disruption of drainage by accompanying earthquake movements, landslides, and damming by volcanic debris. This would tend to increase the selenium content of the volcanic ash deposits in such ponds and would tend to distribute the richer portions somewhat erratically. This mode of occurrence may also have been responsible for the areas of concentrated selenium at Lysite.

3. These volcanic gases could also have escaped upward through the deposits with the tuff acting as a filter and a condensor in its upper portions. These gases would be seeking paths of least resistance which could account for a situation such as has been indicated at Lysite.

4. About a mile to the Northwest of the Lysite tuff deposit lies Copper Mt. Copper and uranium ores from this mountain have been noted to contain selenium. This suggests two more possibilities of perhaps even greater economic significance than the foregoing possibilities. Firstly, a copper-uranium-selenium lode could exist underneath the Lysite deposit at depth and the high selenium content at the surface could be a geochemical halo indicating the presence of copper-uranium-selenium mineralization at depth. The other possibility is that copper-uranium-selenium mineralization on Copper Mt. has been eroded away and reconcentrated in the tuff at lower elevation.

5. Still another possibility is that seleniferous ground waters and surface waters from other areas could have had their selenium stripped from them as they passed through or over the tuffs. This hardly seems likely however due to the low porosity of the tuff and the lack of any recognized precipitant within the tuffs.

6. In these days of critical selenium shortage, it might be suggested that these claims were "salted". This would be an absurd contention because the poisonous nature of this area was recognized prior to 1900 and the attributing cause was identified as selenium during the 1930's when selenium was a drug on the market. Also tremendous quantities of selenium would have been necessary to "salt" an area the size of the seleniferous deposits at Lysite.

7. Lastly, small quantities of selenium in ground water could be concentrated at the surface by evaporation and consequent precipitation of selenium salts from solution. This may be partially responsible for the surface concentrations of selenium that have been recorded but would not account for the concentrations of as much as 0.01 percent selenium that has been noted at a depth of approximately 100 feet at Lysite.

These then are the possible modes of occurrence of selenium at Lysite. Which of these possible modes of occurrence or which combination of modes of occurrence of selenium was actually responsible for the high concentrations of selenium that have been recorded at Lysite, Wyoming may never be determined. This does not prevent an intelligent, scientifically planned exploration program from being conducted in order to block out bodies of known size and selenium content. Indeed, these bodies may be mined out while the mode of occurrence is still the subject of such academic discussion.

EXPLORATION

Regardless of the mode of occurrence of selenium at Lysite, the exploration for selenium ore bodies at this locality should be conducted in three phases as follows:

Phase I

1. Auger drill holes should be put down on a grid pattern at 100' intervals.

2. Holes should be drilled to depths of about 5' when hand augered and from 10' to 20' when power augered.

3. Samples should be taken at surface, median, and bottom hole depths from hand auger holes and every five feet plus a composite from power auger holes.

4. Samples should be individually packaged and numbered with location and depth noted.

5. All samples should be given qualitative field tests for selenium.

6. Composite samples from holes at 500' intervals should be given trace element field analysis for each of the more easily detected heavy metal elements.

7. One composite sample from each claim should be given laboratory trace element analysis.

8. All samples giving a positive field test for selenium should be sent to a commercial laboratory for quantitative analysis for selenium.

9. Additional samples should be taken at 25' intervals surrounding all positive selenium assays until negative assays are obtained. All of these positive samples should also be submitted for laboratory assay for selenium.

10. Likewise, all holes giving significantly high heavy metal assays should be surrounded by additional sampling at 50' or 100' until essentially negative assays are obtained.

11. A gamma radiation count should be taken and recorded at each station on the grid pattern. This can be done at the time the holes are drilled. The results of these readings should be plotted on a map of the area and any anomalies noted.

This phase of exploration should take four men in the field gathering samples and one man in a field laboratory about 150 work days to complete. This is roughly equivalent to one field season in this area. Should two such teams be put to work at the same time, it probably could be done in 75 work days. It is not possible to accurately estimate the cost of this work in advance, as it will depend upon formations and drilling conditions encountered and the absence or presence of obstacles in the work. It is estimated, however, that salaries for the men employed, equipment purchased, rental needed, and laboratory and assay costs, which could run anywhere from $25,000 to $50,000. To this cost there should be added executive supervision and expenses which could amount to several thousand dollars additional cost.

Phase II

1. The results of the laboratory analyses should be plotted on maps of the area and anomalies should be drawn in. A separate map should be made for selenium and for each of the significant heavy metal anomalies. Another map should be constructed showing all of the anomalies superimposed one upon the other.

2. The potentialities of the deposit as an economic source of selenium can be determined at this stage from a study of the selenium anomaly map. Additional holes may have to be drilled to greater depth on the selenium anomalies particularly if significant quantities of selenium were detected in bottom hole samples.

3. Deep hole locations should be determined by a study of the heavy metal anomalies. Overlapping anomalies would probably require several deep holes. (100' to 1000') These holes are to be drilled in Phase III.

The cost of mapping Phase II would probably be about $1,000.

Phase III

1. Selenium anomalies mapped in Phase II should be drilled to greater depths to determine if any mineable grade selenium lies beneath the surface concentrations. Samples should be collected at 5' intervals.

2. Holes spotted on heavy metal anomalies during Phase II should be drilled to depth. Samples should be taken at convenient intervals. Any mineralization noted in these holes will require initiation of an entirely new program of deep drilling and assaying and will not be discussed at greater length here.

3. All holes drilled in Phase III should be logged radiometrically.

4. Large representative samples of ore from the selenium anomalies should be taken for metallurgical testing.

5. All samples taken in Phase III should have their assays plotted on the anomaly maps.

The cost of drilling these deep holes under Phase III cannot be accurately estimated, but according to the depth and type of formation encountered could run from 50¢ to $2.00 per foot of depth. It therefore can be seen that this cost could amount to anywhere from $15,000 to $30,000, dependent upon the number and depth of holes drilled. Provision should also be made for costs of assaying the samples obtained from this deep drilling which could add many thousand dollars additional cost. Phase III concludes the exploration program.

After completion of Phase I and II, in the event significant anomalies are disclosed, then you should proceed with Phase III as herein recommended.

From the above it can be seen that an accurate estimate cannot readily be made as to the overall cost of the exploration recommended. However, this total figure could amount to anywhere from $50,000 to $100,000.

ECONOMICS

Pitting, trenching, sampling, and assaying for the General Services Administration confirmed earlier reports of selenium concentration at Lysite, Wyoming, and the tuffs were found to contain a maximum of 0.1% selenium. Most of the pits and trenches giving the high selenium assays were located in the Northwest quarter of the Quarter Horse claims held by the Selenium Corporation of America. A drilling program was initiated by GSA to determine if the entire

tuff deposit was uniformly seleniferous. The results of this drilling proved that the entire volcanic tuff deposit was not uniformly seleniferous and no further work was undertaken. No attempt was made to determine the extent, either horizontally or vertically, of the areas discovered by pitting and trenching to contain significantly high selenium concentration. The delineation of these areas and a search for additional areas of high selenium content is hereby recommended and would be accomplished by the program outlined under "Exploration" in this report. The economic considerations underlying this recommendation are as follows:

1. The price of selenium has tripled since the Government's exploration work was executed.

2. Greatly improved methods of selenium recovery from low grade deposits have been recently tested for the General Services Administration.

3. The deposits are readily accessible, no roadbuilding would be necessary.

4. The tuff deposits can be easily mined by power shovels without blasting.

5. Power transmission lines and fuel oil pipelines cross the Lysite tuff deposits.

Mineralized areas discovered by the exploration program will require a detailed technological and economic study. Therefore, after the conclusion of Phase III, then the results and findings of this exploration work should be submitted to and given careful consideration by your Geological and Executive Department for further recommendation of procedure at that time.

Respectfully submitted,

John D. Sargent

JOHN D. SARGENT
GEOLOGIST

JOHN D. SARGENT
Consultant Geologist
Casper, Wyo.

November 27, 1956

Mr. Roy Randerson
Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

Dear Mr. Randerson:

We have started assaying the drill samples in the vicinity of the radiometric anomalies on your Lysite claims. We are finding approximately four times as much uranium in these samples as we had anticipated. The significance of this is unknown at this time, but it is certainly encouraging.

As I have reported earlier, we found a radiometric anomaly on Tall Indian #1 accompanied by traces of uranium in the validation pits for TI 1-2 and TI 3-4. Likewise, we have a radiometric on TI 13 with a trace in the pits for TI 13-14; a radiometric in the QH 2, 3, 4 and the overlapping PR 17 with an accompanying pit trace on PR 17-18; a radiometric on QH 7 and 9 with confirming traces of uranium in pits QH 7-8 and 9-10; and a radiometric on CC 4, 6 and 8 with a substantiating geochemical assay in pit CC 6. We are now assaying the drill samples taken from the areas on and adjacent to the radiometric anomalies at both 0-5 foot and 5-10 foot depths. There are 155 of these samples. An additional 20 or 30 samples may also be assayed if any leads are developed.

This is as far as we can go without drilling. The next logical step is to drill out the radiometric and geochemical anomalies. To accomplish this I would recommend that about 50 holes be drilled to the water table on the anomalies and an additional 25 be drilled on leads developed by drilling. The initial 50 holes can probably be drilled for about 75¢/foot by rotary-air drill and about 5¢/foot for probing and logging the hole. The 25 additional holes should also be drilled with rotary-air and have samples collected in a cyclone dust collector. Samples collected in the cyclone

should be sampled and packaged and recorded at 5 foot intervals in barren zones and every 30 inches in ore zones. These holes should also be probed and logged. This work can probably be done for about 75¢/foot plus 10¢/foot for sampling and 5¢/foot for probing and logging. If the holes average 50 feet in depth the cost for the work would be approximately $2000.00 for the initial 50 holes and $1125.00 for the additional holes, making a total of $3125.00 for drilling. My fee for setting up the program, supervising the program, travel, field allotment, field assistance, equipment and supplies would be approximately $1300.00. In addition the drill samples will have to be assayed, costing perhaps an additional $200.00. The cost of plotting the probe and assay results and writing the final report on the project would be approximately $200.00. This would be a grand total of $4825.00.

With the information derived from this program it should be possible to determine whether or not a uranium ore body exists at the anomalies and whether or not the body can be mined at a profit. It should also be possible to determine if any additional drilling is necessary before mining.

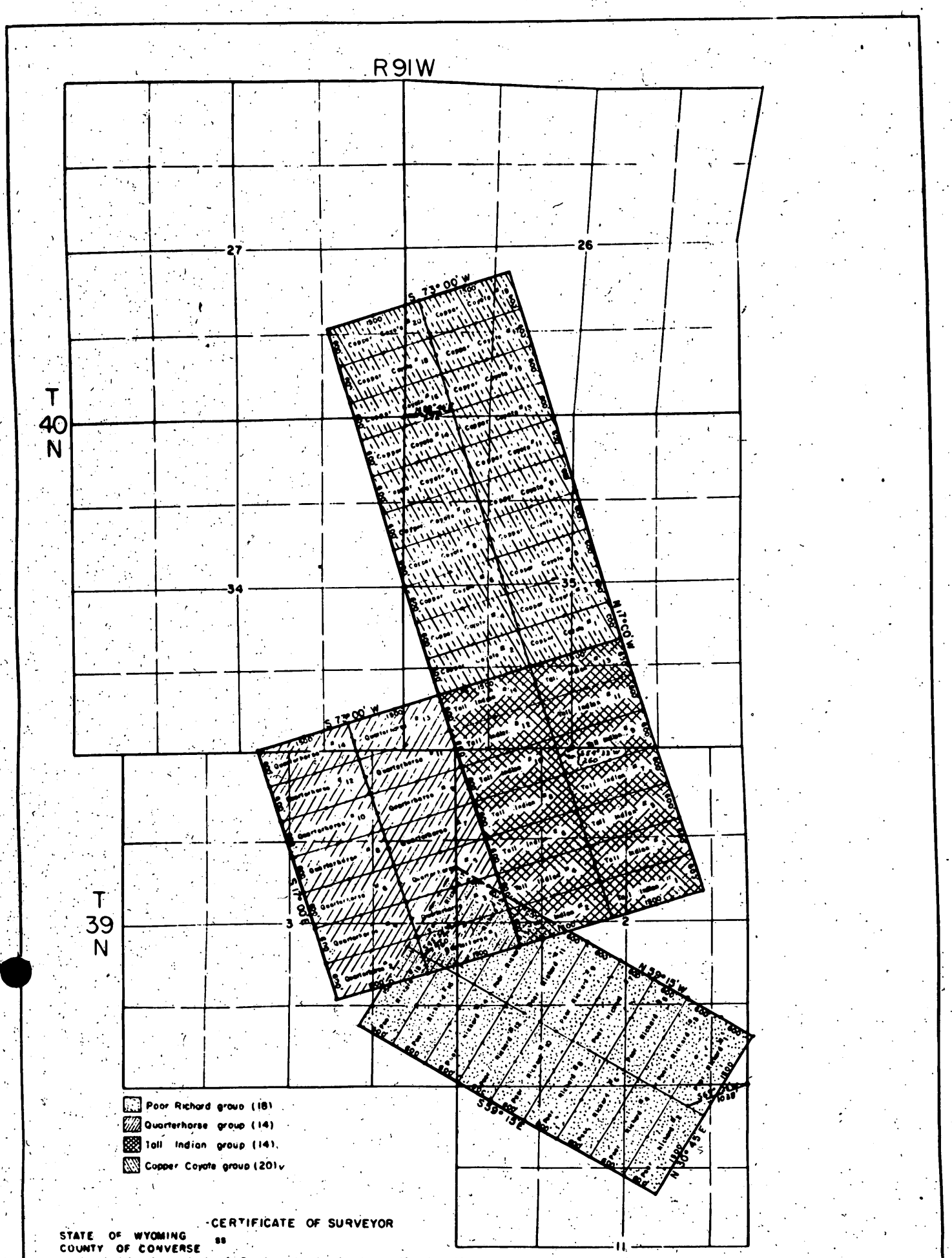
If you have any suggestions or questions concerning this drilling program, please feel free to contact me prior to drafting a contract.

Sincerely yours,

(Signed) John D. Sargent
(Typed) JOHN D. SARGENT

JDS:mrc

EXHIBIT "B"



CERTIFICATE OF SURVEYOR

STATE OF WYOMING
COUNTY OF CONVERSE ss

I, John A Lambert, of Douglas, Wyoming hereby certify that this map was made from notes taken during actual surveys made by me on March 11, 12, 13, 14 and April 1, 2, 3, 1955 and that it correctly shows the location of the claims as staked on the ground.

John A. Lambert
Surveyor

Registration No. 172

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DMEA Form 7
(12-56)

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Date	Surname	Code
7/26	Murphy	700
"	Ellis	700
7/26	Martin	130
"	Johnson	110
"	Mittendorf	100
7/26	P.K.	220
		225

JUL 26 1957

Mr. R. S. Randerson
Chairman of Board
Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

7/26 Kilsgaard (130)
7/26 Kamb (130)

Re: Docket No. DMEA-4684
(Uranium-selenium)
Poor Richard, et al., Claim Groups
Fremont County, Wyoming

Dear Mr. Randerson:

Your application for aid in an exploration project and other information available to us in Washington concerning the 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 indicates that the probability of disclosing significant uranium or selenium ore reserves on your property is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied. However, if future work on your part discloses more favorable evidence of selenium concentration on the property, a new application covering selenium only would receive consideration.

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/gla
7-25-57
cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr. Murphy
THKiilsgaard, Rm. 5224
DMEA Field Team, Region III (2)

8623

DOCKET COPY

July 25, 1957

Summary of Proposed Project

Object: Denial of application for exploration aid.

Docket No.: DMEA-4684

Commodity: Uranium-selenium

Amount of application: $26,400.00

Applicant: Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

Property: Owner of 66 contiguous claims: Poor Richard Nos. 1-18 (inclusive), Quarterhorse Nos. 1-14 (inclusive), Tall Indian Nos. 1-14 (inclusive), and Copper Coyote Nos. 1-20 (inclusive), embracing approximately 1,305 acres in secs. 26, 27, 34, and 35, T. 40 N., R. 91 W., and secs. 2, 3, and 11, T. 39 N., R. 91 W., 6th P.M., Fremont County, Wyoming.

Date of application: March 8, 1957
Referred to Region III: March 29, 1957
Field examination made: May 7, 1957
Field Team Report received: July 15, 1957

Work proposed: Drill 163 non-core holes over 6 general areas which the Applicant states show significant radioactivity and geochemical selenium anomalies.

Estimated Costs:

17,333* feet non-core drilling @ $0.75/ft.	$13,000.00
Probing and logging, 16,000 feet @ $0.15/ft.	2,400.00
Sampling and packaging @ $0.10/ft.	1,600.00
1,000 geochemical uranium assays @ $1.50 each	1,500.00
2,000 geochemical selenium assays @ $1.00 each	2,000.00
100 chemical analyses for uranium @ $3.00 each	300.00
200 chemical analyses for selenium @ $8.00 each	1,600.00
Sample storage, 4 months @ $25.00/mo.	100.00
Surveying drill sites	400.00
Supervision, 3 months @ $1,000/mth.	3,000.00
Communications, transportation, etc.	500.00
Total	$26,400.00

*Includes contingency of 1,333 feet of hard rock drilling.

Excerpts from Field Team Report:

On the subject claims Quaternary gravels and alluvium overlie Tertiary rocks, described by Tourtelot, H. A. (USGS Oil and Gas Invest. Map OM124) as Andesitic tuff and equivalent non-tuffaceous rocks, and the Lysite member of the Wind River formation.

A scintillation counter was tried on many tuff outcrops but no radioactivity appreciably above background count was noticed.

Only the andesitic tuff and alluvial material directly derived from it seem to be particularly seleniferous. It is thought probable that the selenium content is syngenetic and derived directly from the volcanic activity resulting in deposition of the tuff. The general level of selenium content (up to 500 PPM) appears to be quite high, in a geologic sense, but is low, from the point of view of exploiting this material for its selenium content.

The Applicant has drilled 660 holes, ranging from 5 to 10 feet in depth, on 300-foot centers, over the 66 claims. An additional 1700 feet of close-spaced holes were drilled on Quarterhorse Nos. 8, 10, 12, and 14 claims. The U. S. Bureau of Mines also drilled 11 holes, totaling 929 feet, on the Quarterhorse 10, 12, and 14, and also dug 14 trenches in the same general area.

No uranium ore and/or selenium ore reserves were indicated by the above exploratory work.

The field examiners recommend that the Applicant's request for aid in the search for uranium should be denied since there is no indication of significant anomalous radioactivity on the property. However, they recommend that aid in the search for selenium should be denied without prejudice. They recommend an application for selenium only should receive consideration if the Selenium Corporation should have further prospecting done, such as bulldozing of some of the geochemical selenium anomalies and reasonably large tonnages of material containing more than 500 PPM selenium are uncovered. The Field Team concurred in the examiners' recommendations.

Commodity Members' Comments (excerpts):

U. S. Bureau of Mines, James Paone, July 19, 1957

Mr. Paone concurs in the Field Team's denial recommendation.

U. S. Geological Survey, W. P. Williams, July 23, 1957

Mr. Williams summarizes the Field Team report, and notes that he concurs in the examiners' recommendation that the application (for selenium) be denied without prejudice.

Division of Rare and Miscellaneous Metals, F. M. Murphy, July 23, 1957

It appears that although no anomalous radioactivity was noted by the field examiners, they agree that there is a small possibility that Mr. Sargent's (the Applicant's geologist) premise that ground water reconcentration of selenium may have taken place and that pockets of seleniferous material ofhigh enough grade to be considered ore may be present on the claims. Additional surface trenching by the Applicant in the areas showing geochemical anomalies may indicate that deeper exploration is justified.

Conclusions and Recommendations:

This Division agrees with the Field Team that the application for aid in the search for uranium should be denied, and that for selenium the denial should be without prejudice since very high geochemical anomalous selenium acreas have been noted on the claims.

Ernest Wm. Ellis

Ernest Wm. Ellis

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

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July 23, 1957

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of field examination report, DMEA 4684, (uranium-selenium), Selenium Corporation of America, Poor Richard et al claims, Fremont County, Wyoming

The DMEA examining team report that conditions on the applicant's property are not good for the presence of important uranium or selenium ore deposits.

Radioactivity anomalies on the property are small and mostly of low intensity. That is an indication that any uranium deposits that might be present would be small. The general level of selenium content reaches as high as 500 ppm, which is interesting geologically, but is not high enough to support an economic mining venture.

No uranium or selenium ore has been produced from the property. Much exploration has already been done on the property. Six hundred and sixty shallow holes have been drilled on 66 claims. Seventeen hundred more feet were drilled on four of the claims. The U. S. Bureau of Mines drilled eleven holes and dug 14 trenches on the property. None of the work resulted in the discovery of minable ore deposits.

After studying the field examiners' report, I agree with their recommendation for denial of the application without prejudice.

W. P. Williams

W. P. Williams

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July 19, 1957

4684

Uranium - Selenium
Selenium Corporation of America
Poor Richard et al. Claim Group
Fremont County, Wyoming
$26,400

Ernest William Ellis, DMEA Member
Uranium Commodity Committee
James Paone, Bureau of Mines Member
Uranium Commodity Committee

Field Team Report

7/5/57 7/18/57

x

x

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

July 10, 1957

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Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket 4684 (Uranium-Selenium) Selenium Corporation of America (Poor Richard, et al. Claim Groups) Fremont County, Wyoming - Joint Report of Examination

Enclosed are the original and two copies of the Joint Report of Examination on the subject property by Carl Belser, USBM, and D. F. Davidson, USGS.

The field examiners conclude that the probability for making a significant discovery is not sufficiently promising to justify Government participation. Accordingly, they recommend that the Applicant's work proposal be denied to which the Field Team concurs.

W H King
W. H. King
Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
7-19-57
(date)

ON-SITE EXAM. REPORT

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
DEPARTMENT OF THE INTERIOR
JUL 9 1957
REGION III
DENVER, COLORADO

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

TRANSMITTED
JUL 10 1957

July 8, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 4684 (Uranium-selenium), Selenium Corporation of America (Poor Richard, et al. claim groups), Fremont County, Wyoming

Enclosed are the original and eight copies of a joint report by D. F. Davidson, U. S. Geological Survey, and Carl Belser, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes to explore a group of 65 claims for uranium and selenium by 16,000 feet of drilling at an estimated cost of $26,400.

The examiners conclude that there is little or no indication of significant deposits of selenium or uranium on the claims. They recommend that the application for exploration be denied without prejudice on the off chance that additional work by the applicant might indicate a concentration of selenium not now apparent.

I concur with the conclusions and recommendations.

Original signed by
E. N. HARSHMAN

E. N. Harshman
Member, Field Team

Enclosures (9)
ENHarshman:mp

Reviewed by
DMEA OPERATING COMMITTEE
7-19-57
(date)

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DEPARTMENT OF THE INTERIOR
JUL 9 1957
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
JUL 10 1957

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DMEA 4684

Selenium Corporation of America

Poor Richard, et al claim groups

Fremont County, Wyoming

Uranium and Selenium

Joint Engineering and Geologic Report

by

D. F. Davidson, Geologist
Geological Survey

Carl Belser, Mining Engineer
Bureau of Mines

July 5, 1957

Reviewed by
DMEA OPERATING COMMITTEE
7-19-57
(Date)

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DMEA 4684

SELENIUM CORPORATION OF AMERICA
POOR RICHARD et al. CLAIM GROUPS
FREMONT COUNTY, WYOMING

INTRODUCTION AND SUMMARY

Selenium Corporation of America, 2024 Commerce Building, Houston 2, Texas, on March 8, 1957, submitted an application to the Defense Minerals Exploration Administration for aid in an exploration project on 65 unpatented claims comprising the Poor Richard, Quarterhorse, Tall Indian, and Copper Coyote claim groups in secs. 26, 27, 34, and 35, T. 40 N., R. 91 W., and secs. 2, 3, and 11, T. 39 N., R. 91 W., 6th P.M., Fremont County, Wyoming.

The application, DMEA 4684, requested aid in completing 16,000 feet of non-core drilling at a total estimated cost of $26,400.00--Government participation at 75 percent, to be $19,800.00. The proposed exploration was designed to test anomalous areas in the "Lysite Tuff", down to the water level, for uranium and selenium mineralization. A field examination was made on May 7, 1957.

Although 5- and 10-foot holes had been drilled on 300-foot centers, no uranium of commercial grade could be found. Selenium assays had been run by pyrometallurgical methods. The selenium reserves are considered about the same as when examined in 1954-55, by F. D. Everett,

mining engineer, U. S. Bureau of Mines. It is recognized that surface bulldozing of the "Lysite Tuffs" may give additional information concerning the selenium deposits. It is recommended that the application for uranium be denied, and that the application for selenium be denied without prejudice.

ACKNOWLEDGMENTS

John D. Sargent, consulting geologist for Selenium Corporation of America, accompanied the examining team.

Personnel of the Atomic Energy Commission were consulted regarding the area.

Memorandums of J. E. Crawford and W. P. Williams were noted and "Investigation of Tuffs Near Lysite, Wyoming, for Selenium" by F. D. Everett and L. C. Bauerle was studied.

LOCATION, TOPOGRAPHY, AND CLIMATE

The ground to be explored consists of 65 contiguous lode mining claims embracing approximately 1,305 acres in secs. 26, 27, 34, and 35, T. 40 N., R. 91 W., and secs. 2, 3, and 11, T. 39 N., R. 91 W., 6th P.M., Fremont County, Wyoming (fig. 1). The area is one of low rolling hills at altitudes ranging from 5,540 to 5,700 feet.

To reach the property from Moneta on U. S. Highway 20, go north 9 miles over a dirt road to Lysite, Wyoming, a station on the Chicago,

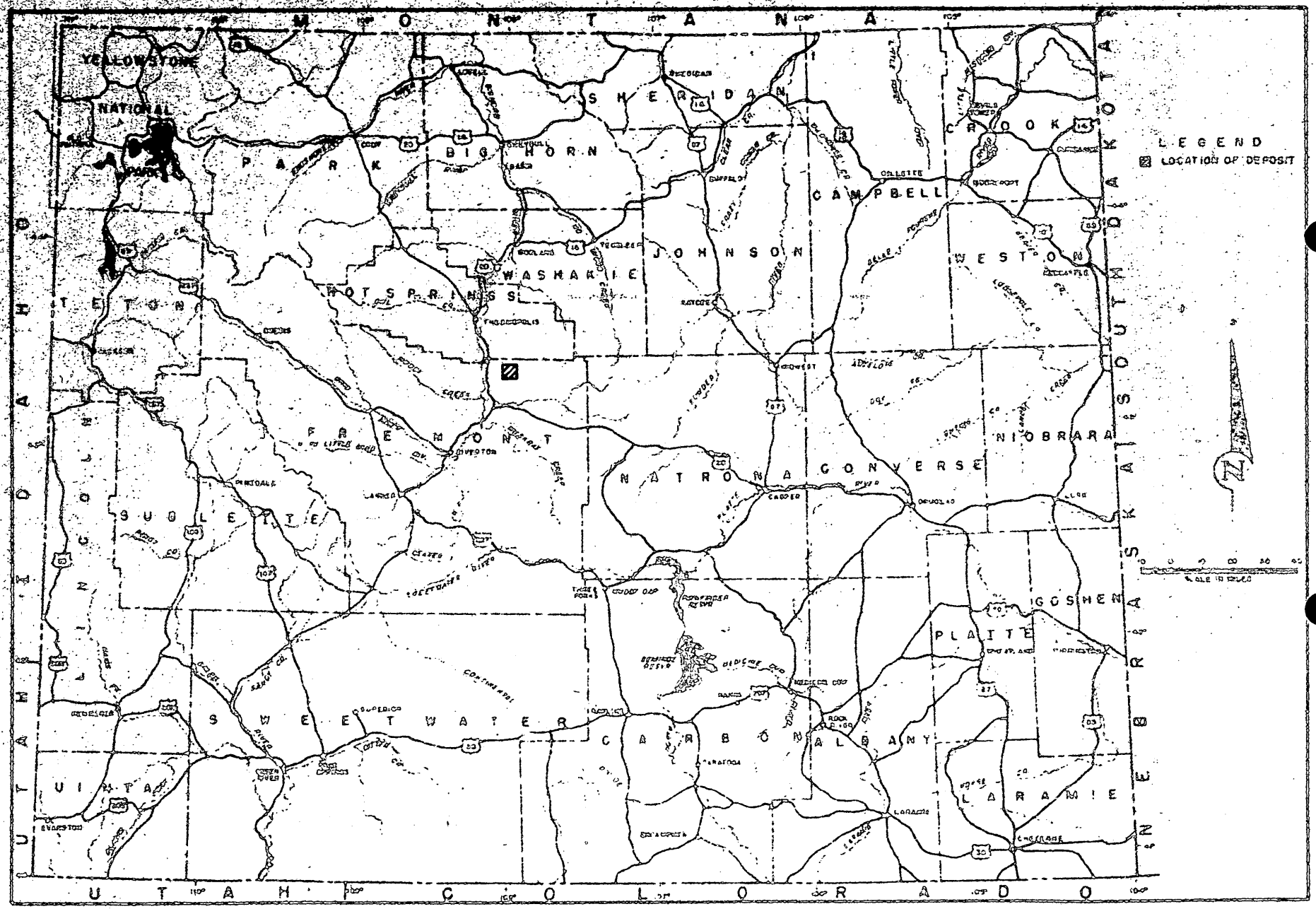

Figure 1 - Location map, Poor Richard et al claim groups, Selenium Corporation of America, Fremont County, Wyoming. DMEA 4686

Burlington & Quincy railroad, thence northerly 2.4 miles over the Days Reservoir road to its junction with the Bridger Creek road, then turn right and continue 6.1 miles to the property.

The climate is semi-arid with hot, dry and windy summers and severe winters. The nearest dependable water supply is Bridger Creek, 2 miles to the east. Vegetation consists largely of sage brush and desert moss. Riverton, Wyoming, is 52 miles southwest of the property and Casper, Wyoming, 94 miles east. Small supplies can be purchased at Lysite. Labor and materials can be obtained at Casper and Riverton. A uranium ore-buying station is maintained at Riverton.

HISTORY AND PRODUCTION

The area called Poison Draw was known to contain poisonous vegetation before 1900. In 1952 the Bureau of Mines began a search for selenium and examined the "Lysite Tuff" on parts of the property described in the present application. Additional trenching, test-pitting, and dry rotary-drilling was done in 1955, but no deposits of commercial-grade selenium ore were found.

The Lookout placer claims were located in September 1954, by local ranchers. The Quarterhorse group which covers some of the Lookout placer claims, and the Poor Richard, Tall Indian, and Copper Canyon groups were located by V. R. Williams in January 1955, and filed as amended locations for Loma Uranium Corporation.

Shallow test holes for selenium were drilled by the applicant in 1956, and a radiometric survey was made.

No production of uranium or selenium ore has been made from the property.

OWNERSHIP AND EXTENT

The claims submitted are recorded in the office of the County Clerk and Recorder of Fremont County as follows:

Claim	Book	Pages	Date Recorded	Locator
Poor Richard No. 1-18 (incl.)	91	172-189 (incl.)	2-10-55	V.R. Williams
Quarterhorse No. 1	do.	190	do.	do.
Quarterhorse No. 3-14 (incl.)	do.	192	do.	do.
Tall Indian No. 1-14	do.	204-217 (incl.)	do.	do.
Copper Coyote No. 1-3 (incl.)	do.	167-169 (incl.)	2-18-55	do.
Copper Coyote No. 4-20 (incl.)	do.	459-475 (incl.)	2-22-55	do.

The Quarterhorse Nos. 1 and 2 are not shown on the applicant's list but are on the applicant's map. They are recorded in Book 91, pages 190 and 191. Mr. Sargent said that the Quarterhorse No. 2 was dropped, but that the Quarterhorse No. 1 was relocated. Conflicts between the Lookout placer claims, and the "S. G. Group" lode claims, with the applicant's claims are noted, and no transfers of claim ownership from V. R. Williams to Loma Uranium Corporation, or from Loma Uranium Corporation to Selenium Corporation of America, are of record. All claims appear to be properly staked.

PRESENT STATUS

Exploration and development

The surface of the property has been explored quite thoroughly by drilling 660 holes, 5 to 10 feet deep, on 300-foot centers, over 66 claims. Additional closely spaced holes, totaling 1,700 feet were drilled on the Quarterhorse Nos. 8, 10, 12, and 14 claims. The Bureau of Mines also drilled 11 holes, totaling 929 feet, on the Quarterhorse 10, 12, and 14, and dug 14 trenches in the same general area.

Mining and milling equipment and other facilities

There is no mining or milling equipment on the property. Other facilities consist of several usable access roads.

GEOLOGY

General

The surficial geology of the holdings of the Selenium Corporation of America is very simple, as may be seen from the accompanying sketch map (fig. 2).

On the claims, Quaternary gravels and alluvium overlie Tertiary rocks described and mapped by Tourtelot[1/] as "Andesitic tuff and

---

1/ Tourtelot, H. A., Geology of the Badwater area, Central Wyoming: U. S. Geol. Survey Oil and Gas Invest. Map OM 124, Sheets 1 and 2, 1953.

Age		Formation	Thickness (feet)	Lithologic characteristics
Eocene	Wind River formation	Lost Cabin member	Not present	Not present
		Lysite member	300-600	Continental beds consisting of a coarsely conglomeratic facies near the mountains, and a fine-grained facies in the basin... the fine-grained facies..consists of yellow, red, brick-red, orange, and gray siltstone and fine-grained sandstone with minor amounts of claystone. Beds of yellow to brown coarse-grained pebbly sandstone are common... Carbonaceous shale occurs locally in the finer-grained parts of the sequence.

Parts of two high angle faults are within the claim boundaries, and the property is bounded on the south by a third. None of the faults are mineralized, and they appear to bear no relation to the "mineralization" examined by the writers.

Ore deposits

No ore deposits have been found on the Selenium Corporation of America's property. One pod (6" by 6" by 1') of uranium minerals (probably autunite) was seen by the writer. It is an accumulation of uranium minerals in weathered material probably derived from Tourtelot's Oligocene and Eocene non-tuffaceous rocks, and its localization has probably been caused by recent ground water movement. The source of the uranium is of course unknown, but the writer believes it is probably derived from the weathering of Precambrian granitic rocks to the north. Uranium is known to be present locally in the granite. Radioactivity anomalies on the property are small, and for the most part of low intensity. They do not indicate the presence of significant uranium deposits.

Only the tuffaceous material of Tourtelot's Eocene-Oligocene andesitic tuff member, and alluvial material directly derived from it seem to be particularly seleniferous. It is thought probable that the selenium content is syngenetic and derived directly from the volcanic activity resulting in deposition of the tuff. The general level of selenium content appears to be quite high, in a geologic sense (up to 500 ppm selenium) but is very low, from the point of view of exploiting this material for its selenium content.

Sargent is of the opinion that ground water reconcentration of selenium may have taken place and that pockets of seleniferous material high enough in grade to be considered "ore" may be present. The writer agrees that this is a possibility for there does seem to be local enrichment of selenium in the weathering profile, but the likelihood that a significant tonnage will be found is considered small.

SAMPLING AND ORE RESERVES

The examining team cut one 8-foot channel sample on the Quarter-horse No. 8 claim which contained 0.024 percent selenium, and three 3-foot holes, 4-inches in diameter, were bored into the so-called high anomaly on Tall Indian No. 1 claim. The drillings from these holes contained 0.002 percent selenium, and were not radioactive. A scintillation counter was tried on many tuff outcrops but no radio-activity appreciably above background count was noticed.

There are no known uranium ore and/or selenium ore reserves on the property.

APPLICANT'S ESTIMATED COST OF PROJECT

The applicant shows 163 drill sites scattered over 6 general areas. Proposed drilling aggregates 16,000 feet. These areas have

been located by a previous radiometric survey and the holes are proposed to be drilled to water table. The applicant's estimated cost of the project follows:

Independent Contracts:

16,000 feet of non-core drilling at $0.75/ft.	$12,000.00	
Probing and logging 16,000 feet at $0.15/ft.	2,400.00	
Sampling and packaging at $0.10/ft.	1,600.00	
1,000 geochemical uranium assays at $1.50 each	1,500.00	
2,000 geochemical selenium assays at $1.00 each	2,000.00	
100 uranium chemical analyses at $3.00 each	300.00	
200 selenium chemical analyses at $8.00 each	1,600.00	
4 months sample storage at $25.00/mo.	100.00	
Surveying of drill sites	400.00	
Total Independent Contracts:		$21,900.00

Labor and Supervision:

Project manager 3 months at $1,000/mo.	$ 3,000.00	
Total Labor and Supervision		$ 3,000.00

Operating Materials and Supplies:

None

Operating Equipment:

None

Rehabilitation and Repairs:

None

New Buildings, Improvement, and Installations:

None

Miscellaneous:

None

Contingencies:

Additional .75/ft. through 1,333 feet of hard rock	$ 1,000.00	
Communications, transportation, etc.	500.00	
Total Contingencies		$ 1,500.00
Total Estimated Cost for 16,000 feet of drilling		$26,400.00
Estimated cost per foot		$ 1.65

RECOMMENDATIONS

All things considered, the writers are of the opinion that the Selenium Corporation's request for aid in the search for uranium and selenium should be denied, but that the following distinction should be made. Aid in uranium exploration is to be denied outright, but aid in selenium exploration is denied without prejudice. If the

Selenium Corporation should have some further prospecting work done, bulldozing of some of Sargent's geochemical selenium anomalies, for example, and reasonably large tonnages of material containing more than 500 ppm selenium are uncovered, a reconsideration of Selenium Corporation's application for aid in the search for selenium will be justified.

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DATE CODE
4/11 C 220
~~Murphy 700~~

DMEA
DEPARTMENT OF THE INTERIOR
APR 8 - 1957
REGION III
DENVER, COLORADO

April 5, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Reg. III

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4684 (Uranium-Selenium) Selenium Corporation of America (Poor Richard, et al claim groups), Fremont County, Wyoming

The application for Selenium Corporation of America, Docket DMEA 4684, in the amount of $26,400.00 was received in this office on April 5, 1957.

A field examination will be made and suitable report prepared by an engineer from the Denver office.

W. H. KING

W. H. King

cc: Executive Officer (2)
E. W. Marshman
J. F. Shaw

no(2)

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DMEA
RECEIVED APR 8 1957

DATE	INITIALS	CODE
4/8	C	220
	Murphy	700

224 New Customhouse
Denver 2, Colorado

April 4, 1957

Memorandum

To: E. N. Harshman
W. H. King } W/enclosures, Items 1-5 Below

From: DMEA Field Team, Region III

Subject: Docket DMEA-4684 (Uranium-Selenium) Selenium Corporation of America (Poor Richard et al. Claim Groups), Fremont County, Wyoming

Enclosed is the following material relating to the subject docket.

1. Copy of application for Government assistance in exploration work under the DMEA program.
2. Memorandum of review by John E. Crawford, Bureau of Mines.
3. Memorandum of review by W. P. Williams, Geological Survey.
4. Letter of transmittal of the foregoing to this office, dated March 29, 1957, from the Chairman, Operating Committee, DMEA.
5. Routing control sheet.

You are requested to submit either a joint report of recommendations based on available information or to examine the property and submit a joint report of the findings and recommendations.

If the field examiners recommend Government participation in the proposed exploration program, please submit twelve extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries.

The Bureau of Mines' copy of the application should be returned to this office with the joint report of examination. Mr. Harshman will forward the Survey's copy of the application to the Washington office.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosures
MHM:eh
cc: Sec. Op. Comm. (2)
King
Docket W/enclosures, Items 2-4
Chron.

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
3/28	Murphy	700
3/28	Elbin	700
3/29	Selfridge	130
"	Harshman	110
"	Mittendorf	100
4/1	C	225

700
Kilsgaard
Bishop

MAR 29 1957

Mr. R. S. Randerson
Chairman of the Board
Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

Re: Docket No. DMEA-4684 (Uranium-selenium)
Poor Richard, et al., Claim Groups
Fremont County, Wyoming

Dear Mr. Randerson:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to:

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you in regard to your project if additional information is required.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/izm 3-28-57
cc to: ½ Mr. Murphy
Admr.'s Reading File
DMEA FT Reg. 3 (2)

8623

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
3/28	Murphy	700
3/28	Ellis	700
3/29	Selfridge	130
"	Johnson	110
"	Pettengill	100
		225

MAR 29 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4684 (Uranium-selenium)
Selenium Corporation of America
Poor Richard, et al., Claim Groups
Fremont County, Wyoming

Dear Mr. Harshman:

The captioned application is referred to the Field Team, Region III, for investigation, a field examination if deemed advisable, and recommendations.

Enclosed are copies of memoranda, dated March 19 and 27, 1957, by J. E. Crawford, USBM, and W. P. Williams, USGS, respectively, relating to the application. Also enclosed, for Field Team use, are two copies of the application.

Judging from the supplementary information submitted by the Applicant, the USGS and USBM have completed considerable reconnaissance work in the immediate area of the subject claim groups.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

APPROVED:

O. M. Bishop
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

FMMurphy/izm 3-28-57
cc to: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

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

OFFICIAL FILE COPY
DMEA IN REPLY REFER TO:
RECEIVED MAR 27 1957

DATE	INITIALS	CODE
3/28	C	220
"	Ellis	220 comments complete
	Murphy	

March 27, 1957

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 4684, Selenium Corporation of America, Poor Richard, et al claims, Lysite area, Fremont County, Wyoming, (uranium and selenium).

The applicant proposes to explore for uranium and selenium ore deposits on ground comprising 66 mining claims. The proposed project would consist of 16,000 feet of drilling at a total estimated cost of $26,400.

The applicant has planned his drill site locations on the basis of geochemical soil and radiometric surveys. Although the applicant appears to have completed fairly extensive geochemical and radiometric surveys, it is difficult to evaluate the work from his maps and reports. Some of his maps, for instance, delineate anomalous areas but these areas are inadequately described as 'significant' or 'high' anomalies. No numerical values are assigned to the anomalies. One map does show the uranium content of soil on the property in parts per million. This map is not impressive as only one relatively tiny area on the whole property shows a uranium content of more than 32 ppm - which is about background level for the vicinity of ore deposits in other places.

The application could be much better documented with factual results of the applicant's surveys. I recommend, however, that the application be referred to the Field Team for further action. The proposed venture appears to be quite a 'long shot' nature unless the applicant can demonstrate to an examining team that his 'anomalies' are present and significant.

W. P. Williams

W. P. Williams

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[illegible] Angles 29, D. C.

Date March 19, 1957

D.M.E.A. Docket No. 4684
D.M.E.A. Contract No.
Commodity Uranium and Selenium
Name of applicant Selenium Corp. of America
Name of property Poor Richard, Quarterhorse, etc.
Location of property Fremont County, Wyoming
Estimated cost of project $26,400.00

Ernest William Ellis, DMEA Member
Uranium Commodity Committee
John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Application
(Application, Field Team Report, [illegible])

[illegible] 3/8/57. 2. Date received by [illegible] 3/18/57

[illegible] known to reviewer: Yes [ ] No [ ]

[illegible] known to reviewer: Yes [ ] No [ ]

[illegible] on post production: Yes [ ] No [ ]

[illegible] known to reviewer: Yes [ ] No [ ]

[illegible]

[illegible] special consideration:
a. Position [ ]
b. Geochem [ ]
c. Evidence of mineralization [x]
d. Geology [ ]
e. Proposed exploration method [ ]
f. Alternate exploration method [ ]
g. Costs [ ]
h. _____ [ ]

[illegible]:
a. Obtain information from applicant [x]
b. Refer to Field Team [x]
c. Defer [ ]
d. Agree with Field Team [ ]
e. Discuss with Field Team [ ]
f. Suggest alternate plan [ ]
g. Request another examination [ ]
h. Approval [ ]
i. Consult with Mr. _____ at _____, NEC office.

10. Remarks: (Use back of page if necessary)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

March 15, 1957

158 H.

Selenium Corporation of America
2040 Commerce Building
Houston 2, Texas

Subject: DMEA-4604
Re: Exploration Assistance

Gentlemen:

Your application for exploration assistance, dated March 8, 1957 submitted to our office at Denver, Colorado has been assigned Docket Number and referred to the Rare & Miscellaneous Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Chief
Operations Control and
Statistics Division

Copy to: Region III

3571

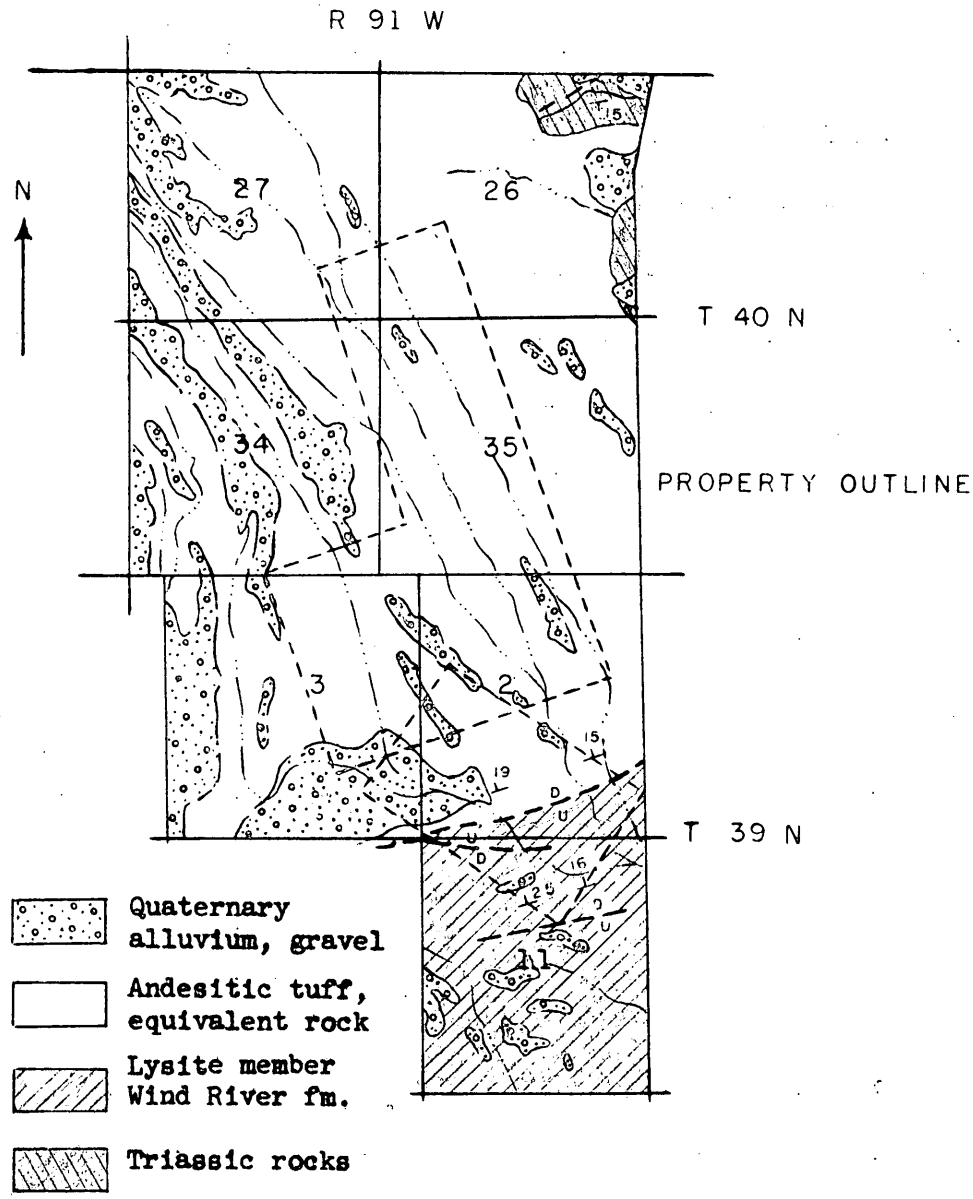


Figure 2. Sketch map showing geology at Selenium Corporation of America claims near Lysite, Wyoming

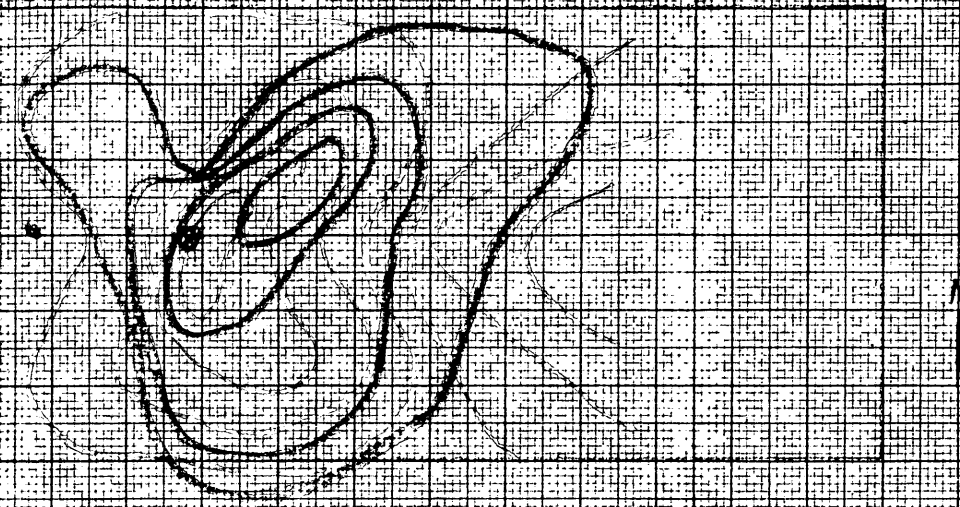
Geology from Tourtelot, Oil and Gas Invest. Map OM-124

equivalent non-tuffaceous rocks, and the Lysite member of the Wind River formation". He describes these rocks as follows:

Age	Formation	Thickness (feet)	Lithologic characteristics
Oligocene or Eocene	Andesite tuff sequence and equivalent non-tuffaceous rocks.	500+	Gray andesite tuff, and grayish tan tuffaceous siltstone and volcanic ash with some beds of conglomerate derived from Precambrian rocks. Inferred to grade laterally toward the mountains into light colored sandstone, and gritty and sandy claystone.
Eocene		500	Green, brown, brownish-yellow and gray andesite tuff. Tuffaceous limestone is prominent in the upper part of the sequence, and volcanic conglomerate occurs in the lower part. Grades laterally toward the mountains into light colored sandstone and gritty and sandy claystones. Relation to older Eocene rocks is not known.

RADIOMETRIC & GEOCHEMICAL ANOMALIES — 150' GRID SPACING

TALL INDIAN #1 CLAIM



— RADIOMETRIC ISORADS

— GEOCHEMICAL ISOCHEMS

⊗ ORE OUTCROP

John R. Nagel 3/1/57

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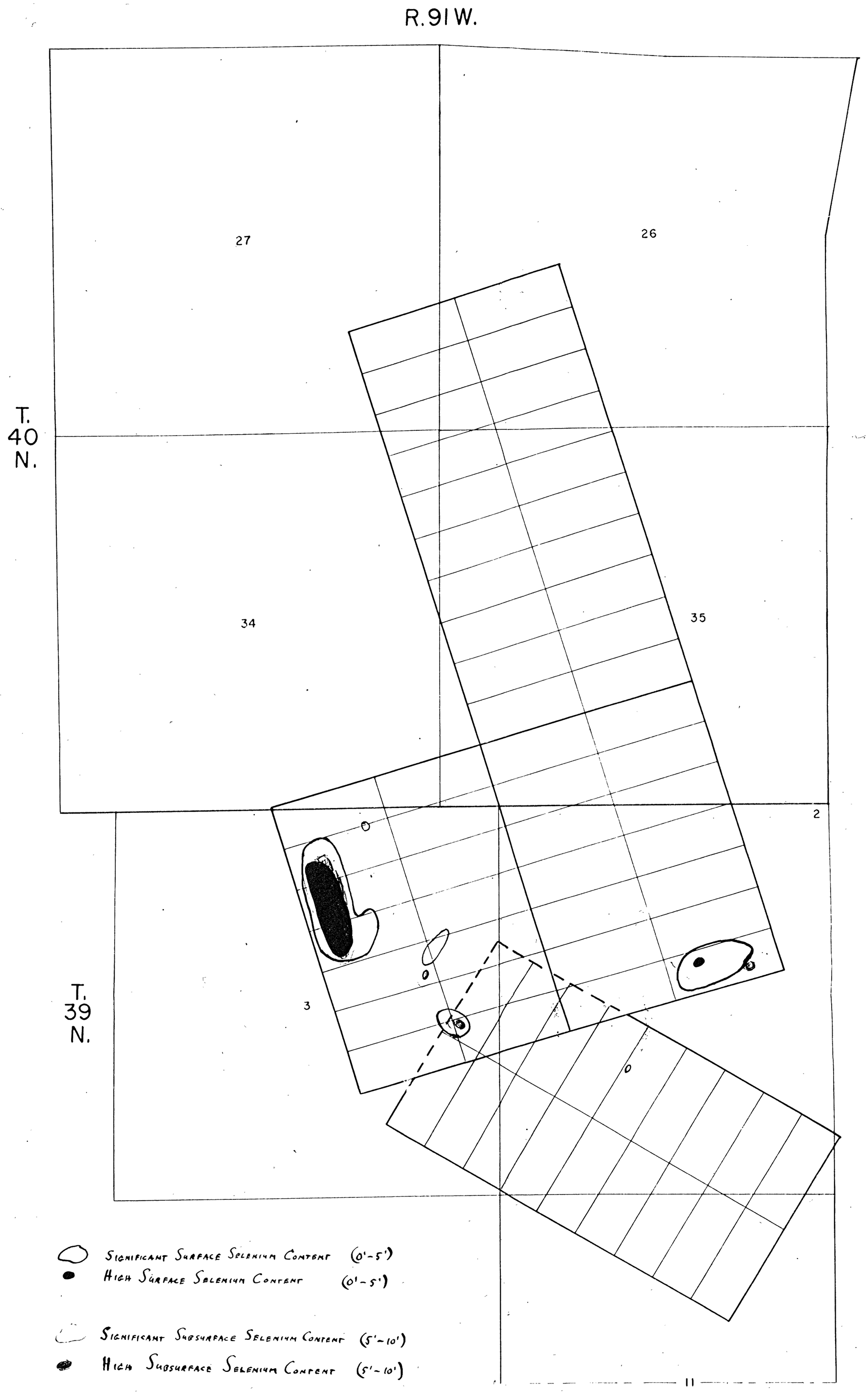
18

ROOM 13 POST OFFICE BLDG. D. C.
KNOXVILLE 2, TENN.
OFFICIAL BUSINESS

Mr. George C. Selfridge, Chairman
Operating Committee
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

6 th P.M. Fremont County, Wyoming.



Significant Surface Selenium Content (0'-5')

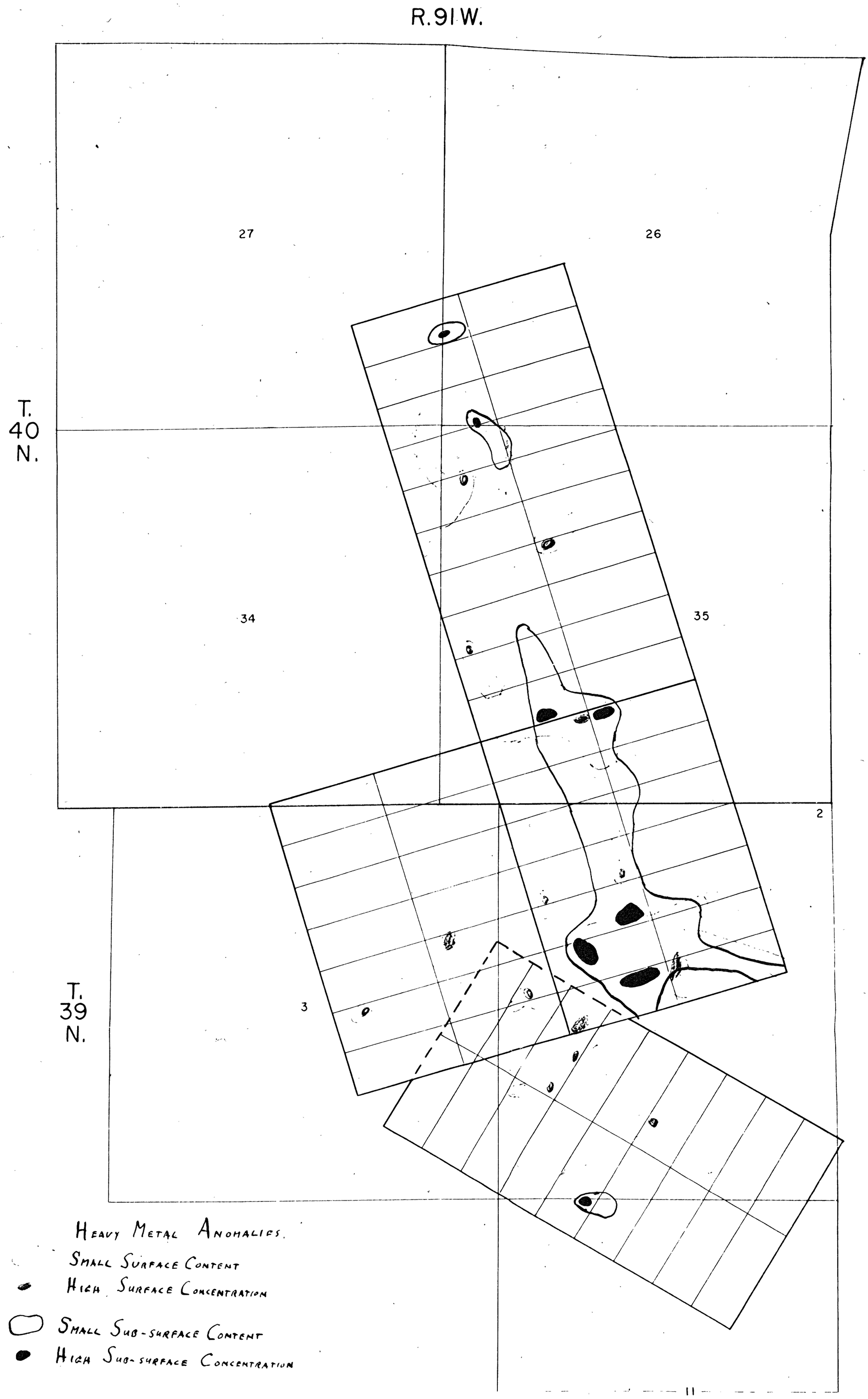
High Surface Selenium Content (0'-5')

Significant Subsurface Selenium Content (5'-10')

High Subsurface Selenium Content (5'-10')

Aug. 8. 1956

6 th P.M. Fremont County, Wyoming.



Heavy Metal Anomalies.

Small Surface Content

High Surface Concentration

Small Sub-surface Content

High Sub-surface Concentration

John L. Sargent

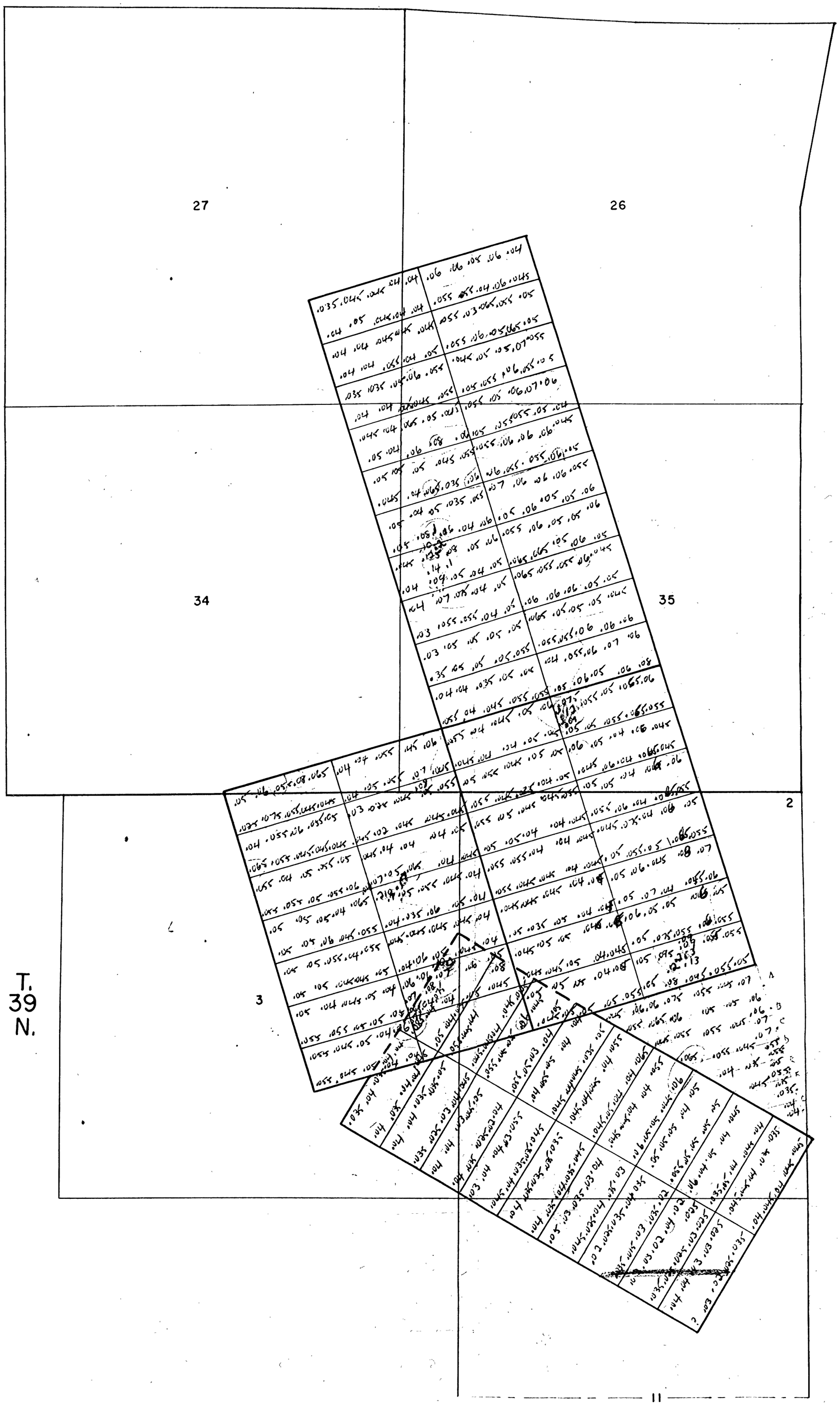
August 22, 1956

6 th P.M. Fremont County, Wyoming.

R.91W.

T. 40 N.

T. 39 N.

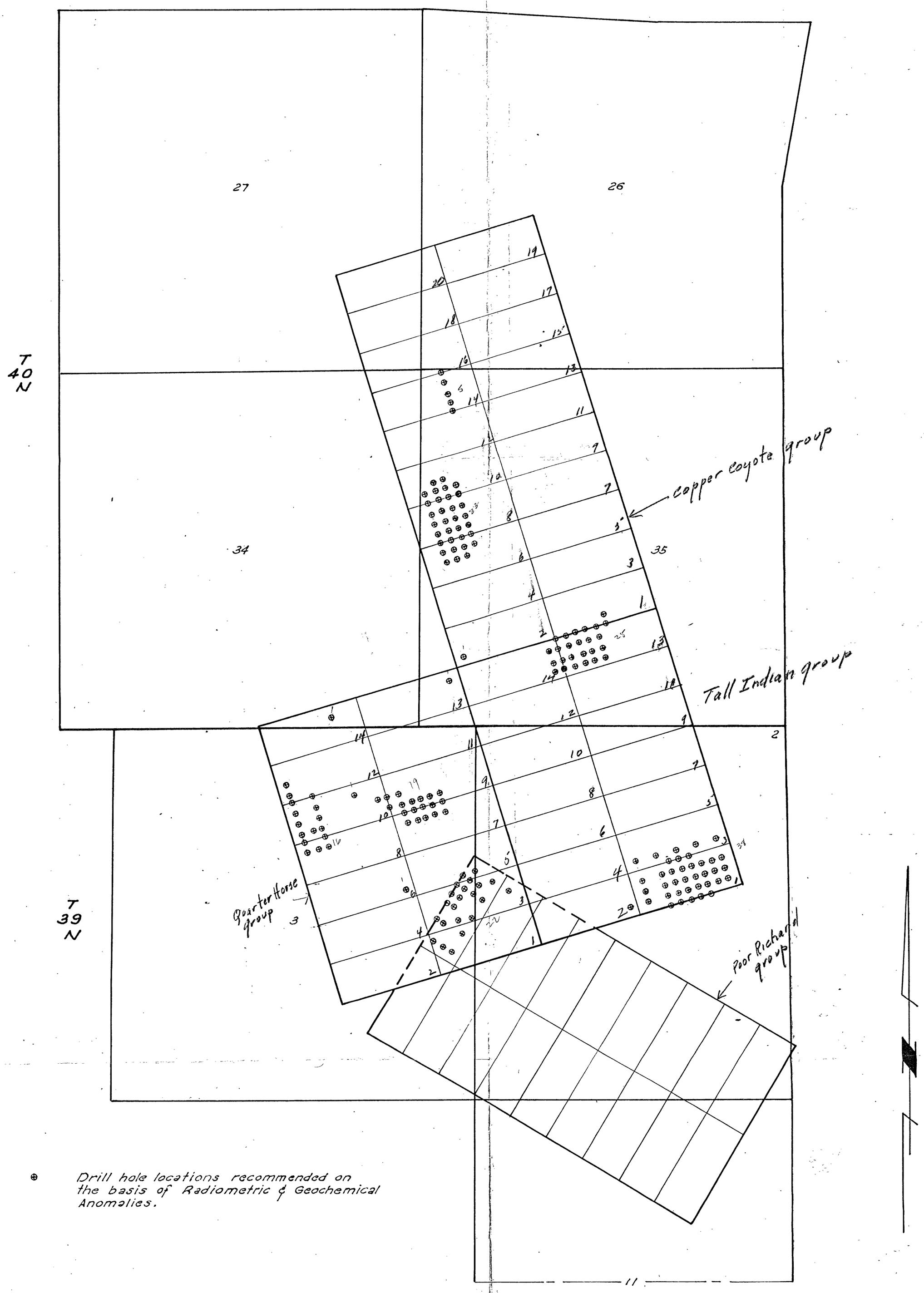


— approximate location of manganese outcrop

John D. Sargent
July 19, 1956

6th P.M. Fremont County, Wyoming

R-91-W

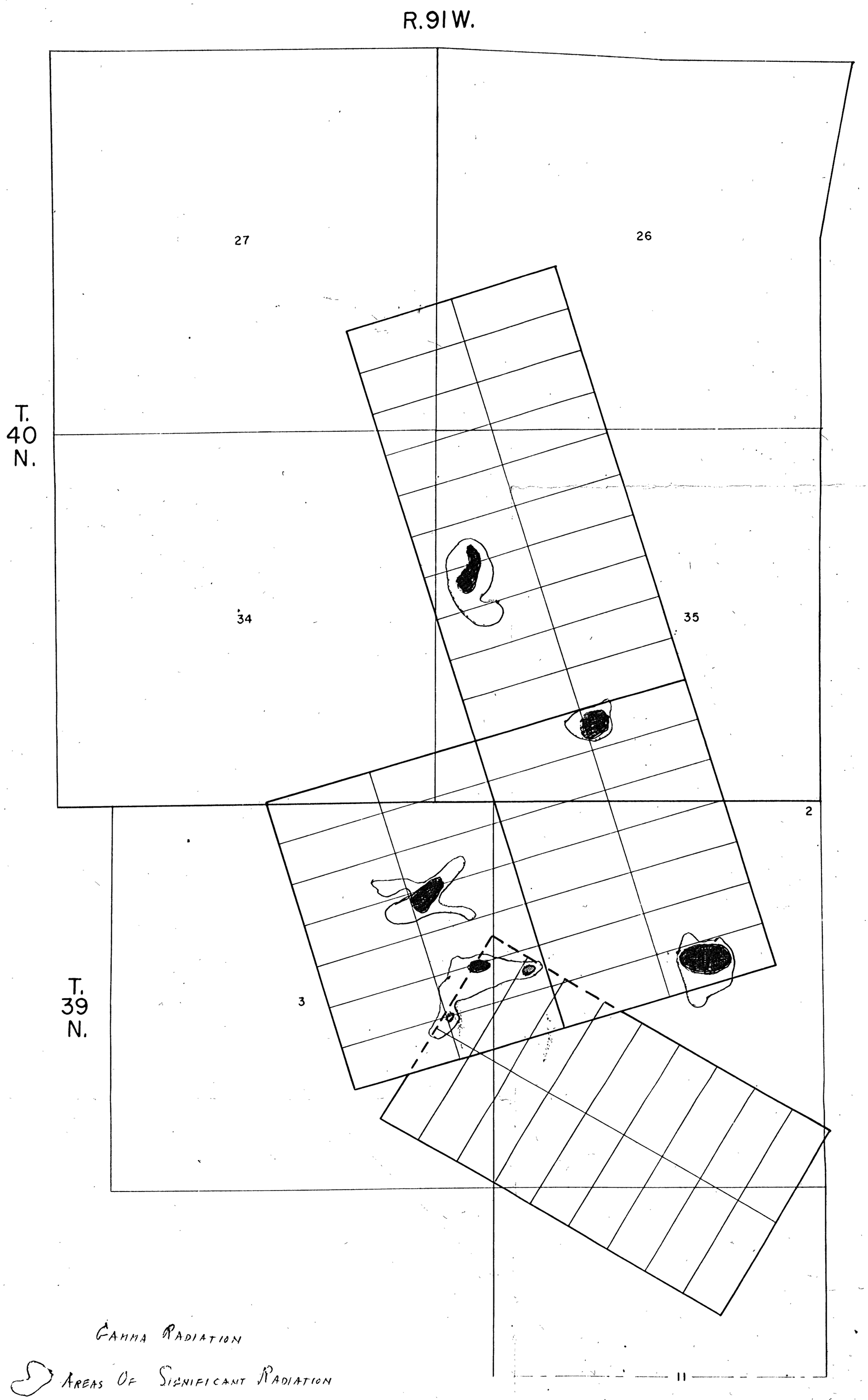


⊕ Drill hole locations recommended on the basis of Radiometric & Geochemical Anomalies.

Scale: 1" = 1000'

John D. Sargent 2-28-57

6 th P.M. Fremont County, Wyoming.



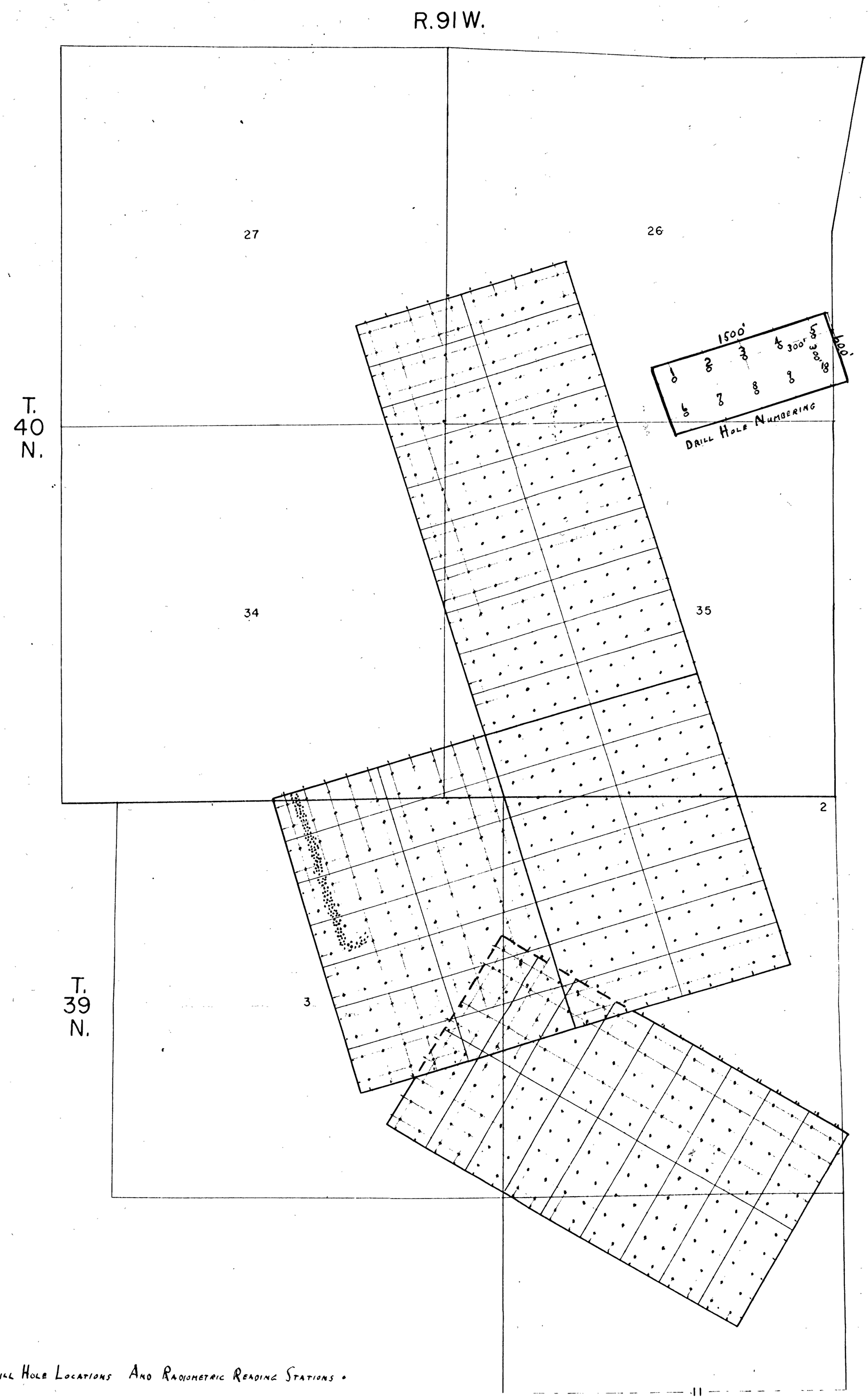
GAMMA RADIATION

AREAS OF SIGNIFICANT RADIATION

AREAS OF HIGH RADIATION

John H. Sargent
July 19, 1956

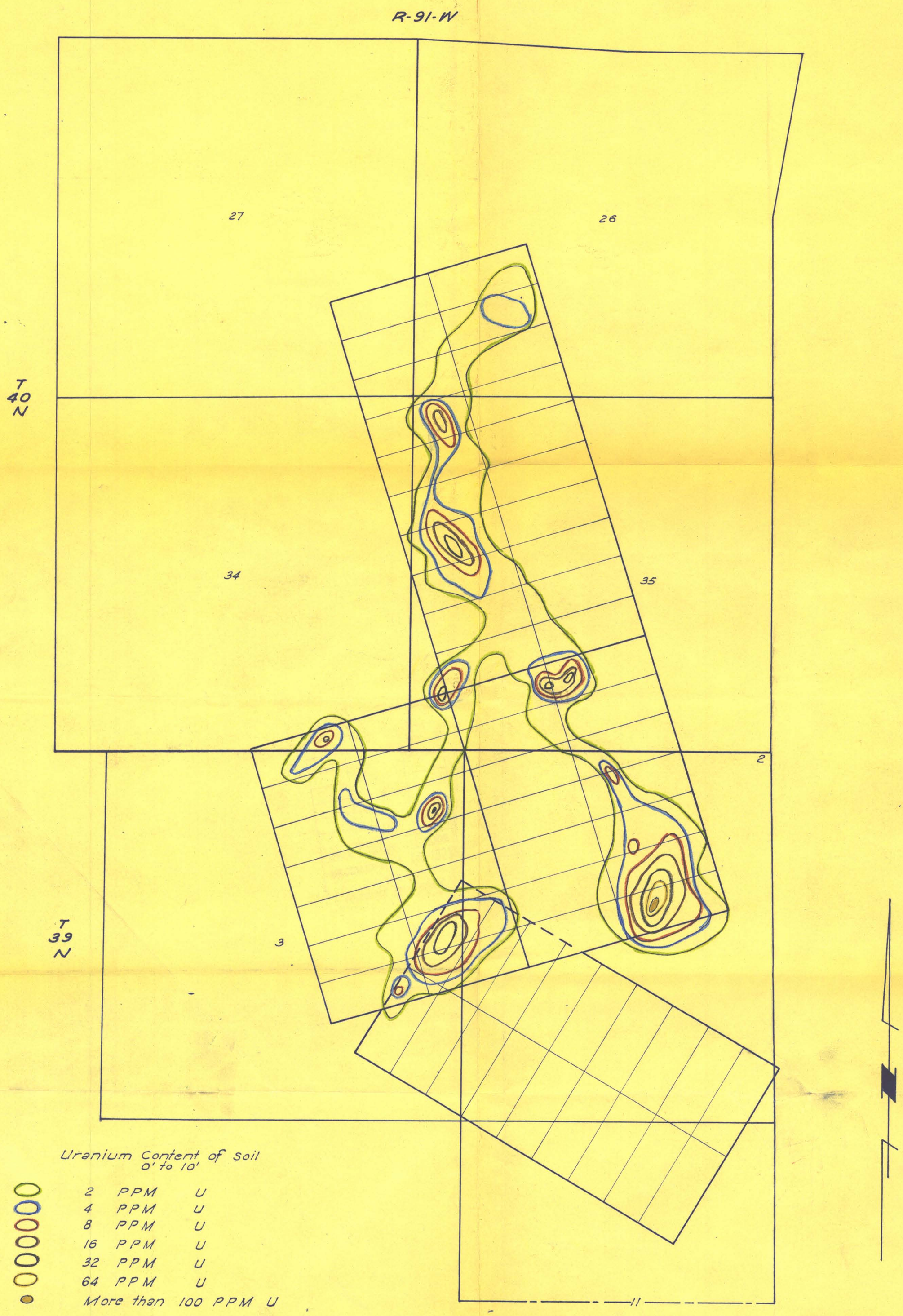
6 th P.M. Fremont County, Wyoming.



• Drill Hole Locations And Radiometric Reading Stations •

John D. Sargent
Aug. 22, 1956

6th P.M. Fremont County, Wyoming



Scale: 1" = 1000'

John D. Sargent 2-28-57