DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E NO. 703

DMEA NO. 3355

Application
- [ ] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [x] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [x] Royalty Audits
- [x] Certification of Discovery
- [x] Closing Letter
- [x] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [x] Contract Amendments
- [x] Contract with all exhibits and annexes
- [x] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [x] Project summary (final)
- [x] Work Comoleted analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [x] Drill Logs

Additional Folders:

Left Side

Folders No. 2 : Reports
- [x] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

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

X Settlement Sheets

Folders No. 3 : Maps (Use pocket folder or envelope)

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

17963

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Contract Idm-E703, Docket DMEA-3355 (uranium), dated September 9, 1954, with

Lowell A. Griffith Associates
c/o Neptune Uranium Corporation
2625 Walnut Street
Denver, Colorado

for the purpose of determining the amount of royalty payable to the U. S. Government on sales of minerals from property referred to as the Shamrock Group of Claims located in Montrose County, Colorado, during the period June 15, 1960, through September 13, 1963.

A certification of discovery or development was issued on May 19, 1955, and, in accordance with Annex II of the contract, royalty is payable on all minerals produced from the land described in Article 2 of the contract for a period of 10 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review dated April 5, 1955, indicated accepted costs under the exploration contract amounting to $16,305.00 with the Government's contribution on a 75 percent basis being $12,228.75.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review found no sales subject to the Government's royalty subsequent to the period covered by a prior Report of Royalty Review which found the sales subject to the Government's royalty through June 14, 1960, to be $50,373.89. The royalty account as of June 14, 1960, was:

Total Royalty Payable	$2,518.74
Total Royalty Paid	2,518.15
Balance of Royalty Due	$ .59

As of September 13, 1963, the royalty account of this project was found to be:

Total Royalty Payable	$2,518.74
Total Royalty Paid	2,518.15
Balance of Royalty Due	$ .59

E. D. Talbert

E. D. Talbert, OME Auditor

September 19, 1963

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

This contract provides that the Operator, as principal if the producer or as surety if not the producer, shall pay to the Government a percentage royalty on all minerals produced from the land thereunder. The Operator is a partnership consisting of Lowell A. Griffith and Paul H. Keating, individuals, and Construction Specialties Company, a Colorado corporation. The land consists of seven unpatented claims (Piper Nos. 1 through 3, Shamrock Nos. 2 through 4, and Outlet) in secs. 14, 15, 22, and 23, T. 48 N., R. 18 W., N.M.P.M., Paradox mining district. The contract recites that the Operator is in possession as lessee and an Owner's Consent to Lien (covering all except the Outlet claim), executed on August 25, 1954, by Keith M. Andrews and Donald K. Andrews is attached.

Exploration work under the contract was completed during November 1954. Production during and after the exploration period resulted in sales through April 1958 of 1,343.69 SDT of uranium ores with total proceeds of $50,373.89 subject to royalty. These sales are covered by Reports of Royalty Review dated March 15, 1956, and June 16, 1960. A balance of $.59 in royalty is delinquently due on Vanadium Corporation of America settlement sheet no. 5-0-46 covering lot no. 89139.

All shipments were made in the name of Griffith Uranium Company and Neptune Uranium Corporation. By letter dated May 20, 1955, the Operator advised that Lowell A. Griffith Associates, sometimes known as Griffith Uranium Company, had incorporated in Colorado as the Neptune Uranium Corporation and assumed all assets and liabilities of the partnership.

Examinations of the property, checks of AEC production records, and inquiries by OME regional representatives disclosed no evidence of production from April 1958 through June 30, 1960. In replies to OME Form 63 inquiries Lowell A. Griffith, on April 25, 1962, as the Operator and on September 13, 1963, as mine superintendent and vice-president of Neptune Uranium Corporation, stated that: (1) Donald K. Andrews, Nucla, Colorado, had cancelled the lease in 1959 and inquiries for information should be directed to him; (2) Micro Copper Company, Moab, Utah, "own or control" the claims (other than Outlet, owned by Neptune); and (3) Neptune had "not made production during the last 3 years anywhere".

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) The files indicate little probability of any unreported production since the date of the contract; and

(2) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Office of Minerals Exploration, Washington, D. C., pertaining to Contract No. Idm-E703, Docket No. DMEA-5555 (Uranium), dated September 9, 1954, with

Lowell A. Griffith Associates
Paul H. Keating, Agent
P. O. Box 163
Golden, Colorado

for the purpose of determining the amount of royalty due the U. S. Government on sales of minerals from property referred to as Shamrock Group of Claims located in Montrose County, Colorado, during the period January 19, 1956, through June 14, 1960.

A certification of discovery or development was issued on May 19, 1955, and, in accordance with Annex II of the contract, royalty is payable on all minerals mined or produced from the land described in Article 2 of the contract for a period of 10 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review in lieu of final audit dated April 5, 1955, indicated accepted costs under the exploration contract amounting to $16,305.00 with the Government's contribution, on a 75 percent basis, being $12,228.75.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review established the total sales of uranium ore for the period to be $28,640.41. Royalty due the Government at rates specified in the contract is $1,432.04.

A prior Report of Royalty Review found the sales subject to Government royalty through January 18, 1956, to be $21,733.48 which added to the sales for this subsequent period make a total of $50,373.89. The royalty account as of January 18, 1956, was:

Total Royalty Due	$1,086.70
Total Royalty Paid	1,086.70
Balance of Royalty Due	$ -0-

At June 14, 1960, the royalty account of this project was found to be:

Total Royalty Due	$2,518.74
Total Royalty Paid	2,518.15
Balance of Royalty Due	$ 0.59

June 16, 1960

C. E. Fisher, OME Auditor

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

Mining operations at this property by Neptune Uranium Corporation, successors to the Operator, were discontinued in May 1958. The last sales on which royalty has been paid to the Government were covered by Union Carbide Nuclear Co. liquidation No. 8000, dated April 30, 1958, and Vanadium Corporation of America liquidation No. 5-0-46 covering the period April 28 to May 15, 1958. No ore is stockpiled at this property.

My review included a tabulation and recomputation of copies of liquidation statements received by Region III, Denver, Colorado, in support of royalty payments made by the purchasers of the ore and furnished to the OME Washington office. This tabulation is filed with my audit work-papers and the results are summarized on the attached Schedule "A".

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) Examination of the copies of the liquidation sheets and correspondence in the Washington office files indicates that all production subject to Government royalty has been reported and proper royalty has been received, except for the underpayment noted on Schedule "A"; and

(2) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

Schedule "A"

Idm-8703 | Lowell A. Griffith Associates | DMRA-3355

	Periods and Amounts		
	9/9/54 to 1/18/56	1/19/56 to 6/14/60	Totals
Production			
Short wet tons	432.01	983.15	1,415.16
Short dry tons	413.13	930.56	1,343.69
U_3O_8 - Pounds	2,712.53	5,022.43	7,734.96
" - Excess 4#/SDT	1,072.02	1,388.47	2,460.49
" - " 10#/SDT	125.24	6.89	132.13
V_2O_5 - Pounds	16,307.12	22,745.47	39,052.59
Proceeds			
U_3O_8 - Base payments	$ 9,438.63	$17,286.37	$26,725.00
" - Excess 4#/SDT	804.05	1,041.39	1,845.44
" - " 10#/SDT	31.30	1.72	33.02
Development allowance	1,356.36	2,511.27	3,867.63
Haulage allowance	631.82	748.56	1,380.38
V_2O_5	5,055.22	7,051.10	12,106.32
Total Receiving Stations	$17,317.58	$28,640.41	$45,957.79
AEC Production Bonus	4,416.10	-0-	4,416.10
Total Proceeds	$21,733.68	$28,640.41	$50,373.89
Royalty Due	$ 1,086.70	$ 1,432.04	$ 2,518.74
Royalty Paid	1,086.70	1,431.45	2,518.15
Balance of royalty due	$ -0-	$ 0.59*	$ 0.59

* Underpayment of royalty due to omission of haulage allowance in connection with V.C.A. settlement No. 5-0-46, as follows:

Item	Due	Settled	Difference
Base payment	$ 136.29	$ 136.29	
Excess 4#/SDT	7.58	7.58	
Development allowance	19.47	19.47	
Haulage allowance	11.75	-0-	$ 11.75
V_2O_5	61.69	61.69	
Total value subject to royalty	$ 236.78	$ 225.03	$ 11.75
Royalty at 5%	$ 11.84	$ 11.25	$ 0.59

MME Form 22
April 59

DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration

CHECK SHEET OF EXAMINING ENGINEER

Operator's Name Lowell A. Griffith Associates

Address % Neptune Uranium Co.

2625 Walnut Street -- P. O. Box 927
Denver 1, Colorado

Exploration Contract No. E 703 Docket No. 3355

			Check One Yes	Check One No
1.	(a)	Does the Operator stockpile ore subject to royalty repayment?		X
	(b)	If so, is segregation and identification procedure adequate?		
2.	(a)	Does Operator commingle production subject to DMEA or OME royalties with exempt production?		X
	(b)	If so, do you consider the allocation of the commingled production equitable?		
3.	(a)	Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		X
	(b)	If so, are adequate records maintained on such material to protect the Government's interest?		
4.		Do you consider the assay controls in effect are adequate?	X	
5.		Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6.		Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA or OME royalties?	X	
7.		Does the Operator buy from or sell to other Operators?		X
8.		Comment on any item 2 (b) to 6 if answer is No.		

6-14-60
Date

Hugh M. Connors
Mining Engineer

[illegible]

FIRST REVIEW OF ROYALTY RETURN

I have reviewed all copies of settlement sheets on file with the Executive Officer, DMEA Field Team, Region III, applicable to royalties collected on the sales of Carnotite ore for the period September 9, 1954 through January 16, 1956, by

Rocky Mountain Corporation
(Successor to Lowell Griffith Associates)
P. O. Box [illegible]
Denver, Colorado,

produced from Shamrock Group of Claims in Montrose County, Colorado, approximately nine miles northwest of Naturita, under the terms of Contract [illegible], Docket No. DMEA-3345.

The exploration contract authorized a total cost of $18,350.00 with Government participation at 75 percent, or $13,762.50.

A Report of Review dated April 5, 1955 by T. H. Bunting, Auditor, showed the total accepted cost to be $16,303.00, with Government participation of $12,226.75.

A Certificate of Discovery or Development was issued on May 19, 1955.

My review included an examination of the semi-annual inspection reports and Check Sheet of The Remaining Engineer, U.S.A.E.C., dated March 2, 1956.

This review was made in lieu of an on-site audit of the Operator's records for the following reasons:

1. Correspondence with the Field Operations Office of the Atomic Energy Commission at Grand Junction, Colorado confirmed that all sales of U308 from this group of claims, subject to DMEA regulations, had been reported to the Executive Officer of DMEA Field Team, Region III.

2. The administrative cost to the Government of an on-site audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

3. The Remaining Engineer is of the opinion that all sales of production have been properly accounted for.

The examination established the total sales of Carnotite ore for this period to be $21,733.45. (See summary attached.) Royalty due the United States Government at the contract rate of 5% is $1,086.70. The royalty paid and balance due are as follows:

Total Royalties Due	$1,086.70
Total Royalties Paid	1,086.70
Balance of Royalties Due	$ 0.00

March 15, 1956

Donald T. Finch

Donald T. Finch, Auditor

[redacted]

RECEIVED

Contract No. [redacted] Market No. NMFS-1355

STATEMENT OF PROCEEDS FOR FISCAL [redacted] 9, 1974 THROUGH AUGUST 16, 1975. -

	S.S.V. and S.S.H. Co.	T.S.C.A.	Gilmore Corporation	Total
Gross Weight, Pounds	786,540	48,810	28,490	864,000
Dry Weight, Pounds	752,942.36	46,373	26,916	826,231.36
Dry Weight, Tons	376.4712	23.1865	13.4580	413.1157
Amount (Averages)				
Vgk	.33	.29	.35	.33
Vg0y	1.92	2.34	2.84	1.97
Pounds Vgk	2,483.65	134.69	94.21	2,712.53
Base Payment Vgk	$8,437.47	$471.42	$329.74	$9,238.63
Development Allowance	$1,241.90	$ 67.35	$ 47.13	$1,356.36
Premiums				
Bonus of 4 lbs. Vgk per Ton				
Pounds Vgk	989.72	41.54	40.37	1,072.63
Amount @ 75¢ per lb.	$742.31	$31.16	$30.28	$804.75
Bonus of 10 lbs. Vgk per Ton				
Pounds Vgk	125.24	-	-	125.24
Amount @ 50¢ per lb.	$62.30			$62.30
Haulage Allowance				
Per Net Ton (Average)	1.22	1.93	5.00	1.065
Number of Net Tons	373.250	24.105	14.385	432.02
Amount of Haulage Allowance	$455.41	$46.52	$114.60	$616.53
Pounds of Vg0y	14,455.72	1,087.00	764.40	16,307.12
Payment Vg0y @ 31¢ per lb.	$4,481.29	$336.97	$236.96	$5,055.22
Total Receiving Station Payment	$15,614.00	$ 943.42	$728.69	$17,326.31
A.S.C. Production Bonus	$1,617.5[illegible]	$ 47.1[illegible]	$36.47	$1,6[illegible]
Total Value Subject to NMFA Royalty	$16,[illegible]	$1,[illegible]	$[illegible]	$18,[illegible]
Average Value Per Dry Ton	$ 42.4[illegible]	$40.[illegible]	$44.34	$40.[illegible]
NMFA Royalty Percentage	[illegible]%	[illegible]%	[illegible]%	[illegible]%
NMFA Royalties Due	$772.4[illegible]	$70.76	$43.20	$1,086.70
NMFA Royalties Received	$772.4[illegible]	$70.76	$43.20	$1,086.70
Balance NMFA Royalties Due	$ [illegible]	$ [illegible]	$ [illegible]	$ [illegible]

Check Sheet of Examining Engineer

RECEIVED
MAR 23 1956

Operator's Name Neptune Uranium Corporation
(Successor to Lowell Griffith Associates)

Address P. O. Box 927

Denver 1, Colorado

Exploration Contract No. Idm-E703 Docket No. DMEA-3355

		Check One Yes	No
1. (a)	Does the Operator stockpile ore subject to royalty repayment?		X
(b)	If so, is segregation and identification procedure adequate?		
2. (a)	Does Operator commingle production subject to DMEA royalties with exempt production?		X
(b)	If so, do you consider the allocation of the commingled production equitable?		
3. (a)	Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?	X	
(b)	If so, are adequate records maintained on such material to protect the Government's interest?	X	
4.	Do you consider the assay controls in effect are adequate?	X	
5.	Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6.	Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA royalties?	X	
7.	Does the Operator buy from or sell to other Operators?		X
8.	Comment on any item 2 (b) to 6 if answer is No.		

M. B. Salsbury
Mining Engineer

Date 3-2-56

82448

Division copy

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

A. G. Keating
Ellin
Chandler
Selfridge
Rubin
"Appd. Sol. Off."

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Lowell A. Griffith Associates, a partnership consisting of Lowell A. Griffith, P. O. Box 673, Central City, Colorado; Construction Specialties Co., 2625 Walnut Street, Denver 1, Colorado; and Paul H. Keating, Apt. 5, Mines Park, Golden, Colorado

Pursuant to the provisions of Exploration Project Contract No. Idm-E703, dated September 9, 1954, (Docket No. DMEA-3355), hereinafter called the "contract" between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Limited high-grade concentrations of uranium-vanadium mineralization were disclosed by drilling in the lowest rim or horizon of the Salt Wash member of the Jurassic Morrison formation.

Dated: MAY 1 9 1955

THE UNITED STATES OF AMERICA

By C. Mitchell Dow
Administrator, Defense Minerals Exploration Administration
Rubin

AGKeating/gla 5-6-55
cc to: Lowell A. Griffith)
Construction Specialties Co.) partners
Paul H. Keating)
K. M. Andrews)
D. K. Andrews) owners
Clarence A. Fredell, Acting Director, Materials Division, EPS
Contract Adm. & Audit Division
Field Team, Region III (2)
Finance Office
Rare & Misc. Metals Division

Docket
Admr.'s Reading File
Operating Committee
Mr. Hedges, Rm. 4604
Mr. Kiilsgaard, Rm. 5224
Mr. F. E. Johnson
Mr. Keating

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
	Selfridge	120
9/22	Johnson	110
9		100
		220

SEP 2 3 1964

Lowell A. Griffith Associates
c/o Neptune Uranium Corporation
Uravan, Colorado

Re: DMEA-3355 (Uranium)
Neptune Uranium Corp.
Shamrock Group
Montrose County, Colorado
Contract Ida-8783

Gentlemen:

By the terms of the subject Exploration Project Contract, as amended, and the certification of discovery or development dated May 19, 1955, all minerals mined or produced from September 9, 1964, to September 9, 1944, were subject to the Government's royalty as set forth in said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

George Fumich, Jr.

Acting Director

MMerrithew/mm (9/22/64)
cc: Donald K. and Keith M. Andrews, Box 87, Nucla, Colo. (2)
Director's Reading File
Region III w/cy of incoming 63 dated 9/9/64
CA&A Division
Docket
Code 120M

23263

4/14/55 gla

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

DEPARTMENT OF
Defense Minerals Administration
RECEIVED
APR 11 1955

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Lowell A. Griffith Associates,
A Partnership Consisting Of
Lowell A. Griffith, P.O. Box 673, Central City, Colo.
Construction Specialties Co., 2625 Walnut St., Denver, Colo.
Paul A. Keating, Apartment 5, Mines Park, Golden, Colorado

pertaining to Exploration Project Contract No. Idm-E703, Docket No. DMEA 3355, including Amendment No. 1, for the months of September to December, 1954, inclusive, covering a project for the exploration of Uranium on property known as the Shamrock Group of Claims, located in Montrose County, Colorado.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with the Executive Officer, DMEA Field Team, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reasons:

All of the costs incurred were under a contract provision for payment by the Government on the basis of agreed estimated costs of units of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor:		$16,587.10
Exceptions (schedule attached):		
Herewith	$282.10	282.10
Total Accepted Cost		$16,305.00

The contract calls for a 75 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Twelve Thousand, Two Hundred Twenty-Eight and 75/100ths Dollars

** $12,228.75 **

is considered valid and proper, provided that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

April 5, 1955

T. H. Brading, DMEA Auditor.

Report of Review received 4/14/55

SCHEDULE OF EXCEPTIONS

Lowell A. Griffith Associates, Docket No. DMEA 3355, Contract Idm-E703

217 feet of drilling claimed in error at $1.30 per foot	$282.10

No. 1
Orig
12/17/4

AMENDMENT OF CONTRACT: No. Idm-E703

Contract Docket No. DMEA 3355, dated September 9, 1954, between the United States of America and Lowell A. Griffith Associates, a partnership consisting of Lowell A. Griffith, Construction Specialties Co., and Paul H. Keating, is hereby amended as follows, effective as of the date of the contract:

> Referring to EXHIBIT "A" attached to Exploration Project Contract form MF-200(A) (February 1952), caption "Estimated Costs of the Work" delete the following: "2/ chemical analyses as required for U_3O_8 and V_2O_5 to a maximum of $600.00 ...." and in lieu thereof substitute the following: "2/ chemical analyses for U_3O_8 and V_2O_5 as required but not to exceed a maximum of 100 samples at $5.00 each." Delete foot note "2/" in its entirety and in lieu thereof substitute the following: "2/ claim for reimbursement for analyses charges must be supported with a copy of assay return showing results."

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated: November 24, 1954

LOWELL A. GRIFFITH ASSOCIATES

By Paul H Keating
Paul H. Keating, Attorney in Fact

UNITED STATES OF AMERICA

By W.H. King
W.H. King, Executive Officer
DMEA Field Team, Region IV

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3355

COMMODITY Uranium

Idm-E703

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 13 1954

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this 9th day of September, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Lowell A. Griffith Associates, a partnership consisting of:
Lowell A. Griffith, P.O. Box 673, Central City, Colorado
Construction Specialties Co., 2625 Walnut Street, Denver 1, Colorado
Paul H. Keating, Apt. 5, Mines Park, Golden, Colorado

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Colorado, County of Montrose, described as follows:[3] The Shamrock group of claims located in Secs. 14, 15, 22, and 23, T. 48 N., R. 18 W., further described in Annex I which is attached hereto.

the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner in possession and entitled to possession, and the Owner's Consent to Lien is attached.~~

None

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within sixty (60) days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of nine (9) months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay seventy-five (75) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $13,762.50, which is seventy-five percent of $18,350.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

~~ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from~~ which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations. **See Annex II substituted for Article 6 above.**

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* **That part of the second sentence of Article 7 beginning with the word "Provided" is deleted.**

Executed in sextuplicate the day and year first above written.

Lowell A Griffith Associates.

Lowell A. Griffith
(Operator)

CONSTRUCTION SPECIALTIES CO.

By F. A. Burns, Vice Pres.

THE UNITED STATES OF AMERICA

By W H Kung
Executive Officer, DMEA
Field Team, Region IV

Paul H Keating

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

DMEA-3355

ANNEX I

The Shamrock group of claims is recorded in the County Clerk and Recorder's Office of Montrose County, Colorado, as follows:

Claim Name	Date Filed	Book No.	Page No.
Piper No. 1	March 30, 1953	349	567
Piper No. 2	March 30, 1953	349	567
Piper No. 3	March 30, 1953	349	568
Shamrock No. 2	April 13, 1950	343	9
Shamrock No. 3	April 13, 1950	343	10
Shamrock No. 4	April 13, 1950	343	11
Outlet	April 15, 1954	In Recorder's Office but not yet filed because of work load.	

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 13 1954

ANNEX II

The following provisions are in lieu of Article 6:

Repayment by Operator. --a. Certification. --If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Royalty on production. --The Operator, as principal, if the Operator is the producer, or as surety, if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

c. Basis for computation. --The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight paid by the buyer to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the raw ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

d. Unsold production. --If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes

its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

e. Percentages of royalty. --The percentages of the Government's royalty shall be as follows:

> One and one-half ($1\frac{1}{2}$) percent of amounts (gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half ($\frac{1}{2}$) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.
>
> (For instance: the royalty on an amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) percent; on an amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

f. Lien for payment. --To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

g. Notice to purchasers. --The operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

h. No obligation to produce. --Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

i. Government not obligated to buy. --Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

58694

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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SEP 13 1954

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Colorado, County of Montrose, described as follows:1/

Piper No. 1 claim Recorded in Book No. 349 Pg. No. 567 Montrose County Recorders Office
Piper No. 2 claim Recorded in Book No. 349 Pg. No. 567 Montrose County Recorders Office
Piper No. 3 claim Recorded in Book No. 349 Pg. No. 563 Montrose County Recorders Office
Shamrock No. 2 claim Recorded in Book No. 343 Pg. No. 9 Montrose County Recorders Office
Shamrock No. 3 claim Recorded in Book No. 343 Pg. No. 10 Montrose County Recorders Office
Shamrock No. 4 claim Recorded in Book No. 343 Pg. No. 11 Montrose County Recorders Office
above claims located in Sec. 14, 15, 22, 23, T-48-N, R-18-W N.M.P.M.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Lowell A. Griffith Associates

Cravan, Montrose County, Colorado

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract or any amendment thereof shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract or any amendment thereof there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

(OVER)

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

_____

_____

_____

Dated this 25 day of August, 1954.

K. M. Andrews [Seal]

D. K. Andrews [Seal]

_____ [Seal]

DMEA-3355

EXHIBIT "A"

Description of the Work

The work consists of wagon drilling 171 holes, on a 100 foot grid pattern, at locations as shown on Figure 2 which is attached and made a part of EXHIBIT "A". The average depth of the 171 holes is estimated to be 79 feet to the base of the Salt Wash member of the Jurassic Morrison formation, which is the bottom of the known ore horizon. The wagon drilling and related operations will be performed in accordance with the following specifications:

1. The maximum footage will not exceed a total of 13,500 feet.

2. In the event that insufficient footage remains within the maximum allowable footage to permit completing a hole to the stated objective the hole will not be started.

3. No hole will be drilled closer than 100 feet from any other hole.

4. All drill-hole cuttings will be recovered by a Duclone dust collector.

5. Drill-hole cuttings will be taken at intervals of not more than 5 feet in barren material, and at intervals of not more than 1 foot in the ore horizon.

6. Drill-hole cuttings taken as heretofore specified will be split and one-half retained for the use of the Defense Minerals Exploration Administration.

7. All drill-hole cuttings will be checked for equivalent U_3O_8 by radiometric means and a portion of the operator's half of the split samples will be analyzed chemically for U_3O_8 and V_2O_5 if the equivalent U_3O_8 determination indicates the presence of an appreciable amount of uranium.

8. It is the operator's responsibility that supervision by an engineer-geologist will be maintained on the project at all times the drill-rig is in operation and that the work be performed in a manner acceptable to the Defense Minerals Exploration Administration.

9. Supervisory services will include hole spotting, collection, examination and storage of samples, preparation of maps and geologic and engineering reports.

Estimated Costs of the Work

1/ Wagon drilling 171 holes
13,500 feet at $1.30 per foot..... $17,550.00

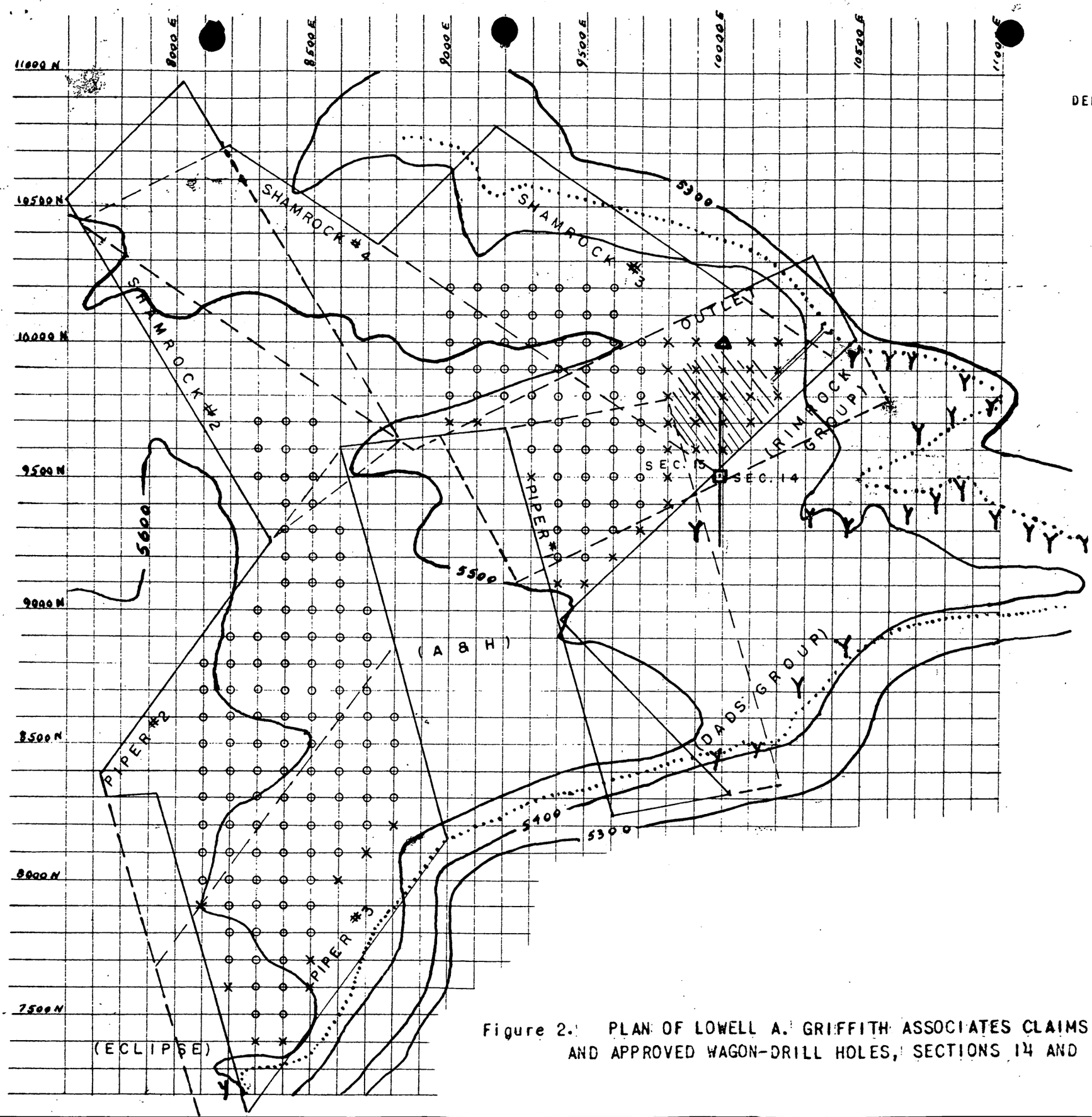
2/ Chemical analyses as required for
U_3O_8 and V_2O_5 to a maximum of $800.00..... 800.00

Estimated Total Cost..... $18,350.00

Government Participation at 75%.. $13,762.50

1/ No reimbursement will be made on partially completed holes. Claim for reimbursement for completed holes must be supported by a certified drill log of the hole or holes involved.

2/ Claim for reimbursement for analysis charges must be supported by a copy of the assay return showing costs and results.



U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3355

EXPLANATION

- APPROXIMATE BASE OF LOWEST SALT WASH SANDSTONE LENS
- o LOCATION OF WAGON-DRILL HOLE PROPOSED BY APPLICANTS AND APPROVED BY EXAMINING FIELD TEAM
- x LOCATION OF WAGON-DRILL HOLE PROPOSED BY APPLICANTS AND REJECTED BY EXAMINING FIELD TEAM
- Y PROSPECT OR MINE
- ADIT AND UNDERGROUND DRIFT
- △ U.S. GEOLOGICAL SURVEY TRIANGULATION POINT ARBITRARILY CHOSEN AS 10,000 FEET N., AND 10,000 FEET E., AS A REFERENCE POINT FOR THE LOCATION OF PROPOSED WAGON-DRILL HOLES
- APPROXIMATE AREA OF GROUND PREVIOUSLY DRILLED
- APPROXIMATE LOCATION OF ¼ LAND SECTION CORNER
- BOUNDARY OF GROUND LEASED BY APPLICANTS AND NOT IN CONFLICT WITH PREVIOUS CLAIMS. CLAIMS BELONGING OR LEASED TO PARTIES OTHER THAN THE APPLICANTS ARE LABELED IN PARENTHESES

BY R.L. BOARDMAN (COMPILED FROM MAPS SUBMITTED BY APPLICANTS AND FROM DATA OBTAINED FROM FIELD EXAMINATION)

Figure 2. PLAN OF LOWELL A. GRIFFITH ASSOCIATES CLAIMS SHOWING APPROXIMATE LOCATION OF PROPOSED AND APPROVED WAGON-DRILL HOLES, SECTIONS 14 AND 15, T. 48 N., R. 18 W., N.M.P.M.

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
MAY 17 1954

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. 3355
Metal or Mineral Uranium
Date Received
Estimated Cost $24,000
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: "Lowell A. Griffith Associates", Uravan, Montrose County, Colorado.

(*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. A partnership, (Colorado).

(*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.

See p. 1, Supplemental data attached hereto.

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 In the back of the Geol-Eng'g report herewith is a copy of the Magneto. under lease. Folio of maps in same report gives complete detail

(*b*) State any mine name by which the property is known. "Shamrock Group" of claims.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lessee. from R.M.Andrews and D.M.Andrews, of Nucla, Colo.

(*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. (Photostat bound with Engineering report, herewith).

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

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Complete map and filing data in att'd Eng. Report

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

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

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

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

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

16—66551-1

Completely covered in attached Geological and Engineering Report.

5. *The exploration project.*—(a) State the mineral or minerals for which you wish to explore Uranium in particular; whatever other valuable minerals may be found.

(*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. Completely covered in att'd Geol.-Eng'r'g report.

(*c*) The work will start within 60 days and be completed within 6 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See p.2, "Supp. data" herewith.

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:

X (*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. p.3, "supp. data" attached herewith.

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

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. ---none--- See p.3, "Supp. data" att'd herewith.

X (*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 p.3, "Supp. data" att'd herewith.

(*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. ---none---

(*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. --none--

(*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. ---none---

(*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. ---none---

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.

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 May 10, 1954, 195__

Lowell A. Griffith Associates
(Applicant)

By Paul H. Keating
Paul H. Keating (One of the partners; Technical Director of the operation).

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

Supplemental Data P1.

Form MF-103, Rev. April 1952

1.

(d): This application is being made by a partnership, the members of which are:--

Lowell A. Griffith,
P. O. Box 673,
Central City, Colo.

Construction Specialties Co.,
2625 Walnut Street,
Denver 1, Colorado

Paul H. Keating,
Apt. 5, Mines Park,
Golden, Colorado

Supplemental Data P.2

MF-103, Rev. April 1952.

5.
(d) "Background":

This concerns personnel. To wit:-

i This application, and the geological investigation and technical direction is being made herewith by Paul H. Keating, Associate Professor of Geology at the Colorado School of Mines. This member of the group making this application was the first technically trained man to go into the "Colorado Plateau" region, in 1917, --- 34 years ago. His functions are in the scientific and technologic areas of this undertaking.

ii Lowell A. Griffith has been identified with every phase of mineral production in the historic Central City area of Colorado for more than 30 years. His Functions are "on-the-ground" supervision and direction.

iii Col. W. E. Griffith (brother of L. A. Griffith, above), is financial advisor and major supplier of the initial funds necessary for preliminary work for this enterprise. As head of the "Specialties Construction Company", already listed as a member of this partnership, Col. Griffith's position as head of his own construction company, establishes him as a qualified "entrepreneur" and financier.

Supplemental Data P.3

MF-103, Rev. April, 1952.

6. (Estimate of costs):-

(a)

It is the intention of the applicant hereof to apply for a "short form" contract.

The Applicant requests aid for 16,000 ft. of exploration drilling, by "wagon drill" methods, at an estimated cost of $1.50 per foot, --- to a total $24,000.

This cost-per-foot is to include logging, supervision, surveying, assaying, mapping, printing, and all other incidentals pertinent to the operation.

The applicant expects to pay its proportionate share of this expense (SEE SECTION 7-b herewith), and of course, to repay by royalty, the capitol expenditure granted, under terms of the contract.

(b)

i. All drilling will be done "on contract", with and by the competing drilling and exploration contractors in the "Colorado Plateau" area. Individual arrangements with these contractors will exclude all liability of this partnership re insurance, etc., but it will include "responsibility", re keeping of logs, location of drill holes, and workman-like prosecution of the contract. It will also include a set of physical samples, in labeled envelopes or other suitable containers, to be delivered to the U. S. Bureau of Mines, the AEC, or any other competent agency; such samples to be taken by the driller, supervisor, engineer, or other agent on the ground during the exploration program.

(d) "Equipment". None, concerned with this application. However, the Applicant has about $20,000 worth of machinery, buildings, and other equipment on the ground at this time, in preparation to mine the potential Uranium-bearing minerals lying within the area pertinent to this application.

PAUL H. KEATING
MINING ENGINEER

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 17 1954

THIS ENVELOPE CONTAINS

1. AN APPLICATION ON FORM MF-103 (rev. April 1952), from "Lowell A. Griffith Associates", (a partnership), to the DEFENSE MINERALS EXPLORATION ADMINISTRATION, (Region IV), New Customs House, Denver, Colorado.

   Attached to this form MF-103, are 3 pages of Supplemental Data, to apply as indicated on the form.

   ----

2. A GEOLOGICAL AND ENGINEERING REPORT ON THE AREA CONCERNED IN THIS APPLICATION.

   The report, bound in black plastic folder, includes

   a. A brief but sufficient discussion of the favorable features of the area, for Uranium production.
   b. Unfavorable cloud-to-title in terms of Oil and Gas Lease conflict, and "Museum Site" withdrawal. (See page 5). The Applicant has been unable to confirm these conflicts, but includes them for further investigation and disposal by competent authority.

   c. A "FOLIO OF MAPS" and other pertinent data: To wit:
      i. Part of the U.S.G.S. "Red Canyon" topographic map.
      ii. A "blown up" portion of (i), pertinent hereto.
      iii. A Traverse survey, and structural contour pattern on the bottom of the producing horizon of the area.
      iv. A claim map, with tabulated data re filing, book-and-page number etc. of the area concerned.
      v. A "Drillers' Map", indicating depth to stratigraphic "bottom" over the area. (Compiled from "ii" and "iii", above.
      vi. A "Drilling Pattern" map, showing location of the proposed drill holes.
      vii. A TABULATION OF THE ABOVE HOLES, showing for each, a. Position (co-ordinates); b. Estimated depth. c. Claim on which it is located.
      viii. PHOTOSTAT COPIES of the terms upon which the applicant obtained a Lessee's title from the original locator. Claims not pertinent to this application are listed, but are of no importance or concern in this action.

(OVER)

[redacted]

Golden, Colo., May 10, 1954.

AFFIDAVIT:

This Application to the Defense Minerals Exploration Administration, dated May 10, 1954, and the accompanying Geological and Engineering Report, and the Maps and Tabulations therein, have all been prepared by the undersigned, personally, both in terms of field measurements, and typewritten statements, as well as map preparation.

THESE DATA ARE CORRECT to the best of my knowledge and belief, and technical skill to date.

THE PURPOSE OF THIS AFFIDAVIT is to personally assume full [redacted] responsibility for all statements herein made.

Signed Paul H. Keating
(Paul H. Keating)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 17 1954

REPORT ON A PORTION OF "CARPENTER FLATS", NEAR URAVAN IN WESTERN MONTROSE CO., COLO.

PURPOSE & PERSONNEL The purpose of this report is to furnish additional pertinent data to the Defense Minerals Exploration Administration, in connection with an application for a contract to explore a specific area for Uranium. The application is made by "Lowell A. Griffith Associates". The personnel of this group is: (See MF-103, "1d", attached)

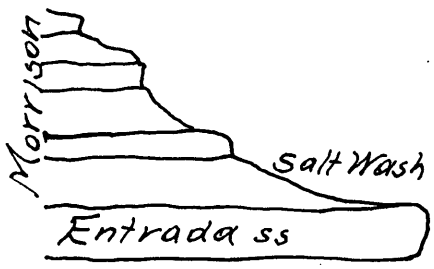
LOCATION The area concerned lies entirely within Secs. 14, 15, 22, and 23, Twp. 48 N, R 18 W, N.M.P.M. These sections are outlined on the accompanying U. S. G. S. topographic sheet, and are located according to a cadastral survey, which was completed about 1951, after the 1949 topographic sheet of the U. S. G. S. Red Canyon. Quadrangle was published. Formal Government corners and quarter-corners have been set in the area, and the claim maps attached herewith show the location of the individual claims with respect to these corners.

GEOLOGY The area concerned in this report is entirely within the stratigraphic limits of the Uranium-bearing portions of the Morrison (Jurassic) formation. This "Morrison" formation consists of a series of zones or "Rims", lying above the Entrada (Triassic) sandstone. This base,

the "Entrada" is known throughout the Colorado Plateau as the "Slick Rock", and is a characteristic feature of the lithologic exposures throughout most of the Plateau. It is brown to pink, to white, highly cross-bedded in texture, highly resistant to erosion, and often forms sheer cliffs of 50 to 200 ft. or more high, with a tendency to weather into a rounded bulging exposure, extending for countless miles throughout the region. It is a highly important "marker bed". (In the earlier literature on the region it was called the "La Plata" sandstone, but current nomenclature calls it the "Entrada", --- and local usage refers to it as the "Slick Rock").

The bulk of Carnotite (Uranium ore) production has come from the series of steps or "rims" lying immediately above the Entrada, and particularly from the lower rim, known as the "Salt Wash" member.

These steps, or rims, are marked by a ledge or layer of sandstone, 10 to 50 ft. thick (each). Between these ledges of sandstone is a series of thinner layers of red and blue clay and red, yellow, and white sandstone. These minor bedding units lying between the heavy sandstone layers, are less resistant to erosion, and therefore weather away more rapidly. As a result, an idealized cross-section of the Morrison, in the Colorado Plateau would look like this:



The region concerned by this application includes for the most part what is called the "First Rim". That is, it is in the first heavy sandstone ledge above the Entrada or base. A few local spots include the second and even third rims above this base. HOWEVER, for the intent at hand, it is our purpose to drill or explore only to the bottom of that Salt Wash rim lying immediately above the Entrada sandstone. The bottom of this first rim is 40 to 60 ft. above the Entrada, and it would not be sound to explore closer than 40 ft. above the Entrada-Morrison contact, in a program of this purpose and intent.

In a few localized examples, where the topography suddenly rises, the predicted drilling depth may reach or exceed the maximum capacity of ordinary modern wagon-drilling equipment. In these cases the "drilling pattern" has been left blank on the attached proposed drilling map, or marked with a suitable notation. To wit: This program is intended to find ore bodies at economical depths, and to mine them at an early date, at a royalty that will discharge the contract or obligation that made their discovery possible.

LOCAL GEOLOGY Actual field measurements on this "Salt Wash Rim" referred to above, were made on surface and underground occurrences of production and/or prospect pits in this area.

Here are the results:

There is a "zone" of about 20 to 25 ft. thick, vertically, (or stratigraphically), in which ore is "made". The deposition and concentration into "ore", winds stratigraphically up and down within this vertical interval.

However (and up to now), in this area there has been no production-wise discovery of Carnotite below the bottom major ledge of sandstone that marks the "first rim" above the Entrada. BUT PRODUCTION HAS AND IS COMING FROM IT!

Therefore: It is our intent to explore our net area in this program, only to the bottom of that major sandstone member that marks the "Salt Wash Rim", --- and only in those areas of our property in which a discovery can be reached economically, by tunnel, shaft, or incline.

ACCESSIBILITY A Government Agency has recently built a new access road into the "Carpenter Flats" area. A bridge has been built across the Dolores River about 28 miles from the Town of Gateway, on the road to Uravan. Trucks can get in and out 350 days per year. (The access road is not recommended for tourist travel.) The ONLY highway between Uravan and Gateway is mostly along the canyon of the Dolores River. The bridge referred to above, is about ten miles down-stream from Uravan.

CONFLICTS The undersigned has discovered to the dismay of former clients that there are "Governmental Withdrawal Orders", duly published in the Congressional Record, which invalidate certain areas from the Public Domain. These executive orders, in "published" form, are not accessible to most individuals or entrepreneurs devoted to free enterprise in the far places of the Colorado Plateau. We therefore submit hearsay that has the slenderest threads of rumored conflict, --- These are totally without authority. We simply

offer them in order to expedite approval of our application for a contract, and our operations to the end of producing Uranium --- "our Security Element" as of today:

1. An Oil and Gas lease conflict on part of Sec. 15., Twp 48 N, Range 18 W, N. M. P. M.

2. A "Museum Site" --- withdrawn by "X" agency, --- for unknown purpose. IF "X" agency DID withdraw it we have been unable to discover the Agency, Order No., or Date. We simply forward this rumor, in order to either establish or abolish any cloud to our title.

TITLE The claims upon which we are requesting this exploration assistance are under lease from Andrews, of Nucla, Colorado. Physical existence of these claims is presented on an attached map.

Signed Paul H Keating.

TABULATION OF ESTIMATED DRILLING DEPTHS

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
8100	7900	70		Piper #3	
8100	8000	70		Piper #2	
8100	8100	76		" "	
8100	8200	86		" "	
8100	8300	100		" "	
8100	8400	115		" "	
8100	8500	114		" "	
8100	8600	115		" "	
8100	8700	113		" "	
8100	8800	110		" "	
8200	7600	80		Piper #3	
8200	7700	70		" "	
8200	7800	60		" "	
8200	7900	60		" "	
8200	8000	64		" "	
8200	8100	63		Piper #2	
8200	8200	73		" "	
8200	8300	83		" "	
8200	8400	103		" "	
8200	8500	105		" "	
8200	8600	110		" "	
8200	8700	108		" "	
8200	8800	106		" "	
8200	8900	110		" "	
8300	7400	50		Piper #3	
8300	7500	78		" "	
8300	7600	80		" "	
8300	7700	66		" "	
8300	7800	55		" "	
8300	7900	55		" "	
8300	8000	56		" "	
8300	8100	56		" "	
8300	8200	62		" "	
8300	8300	78		Piper #2	
8300	8400	101		" "	
8300	8500	108		" "	
8300	8600	110		" "	
8300	8700	105		" "	
8300	8800	100		" "	
8300	8900	103		" "	
8300	9000	101		" "	

8300	9500	80		Shamrock#2	
8300	9600	106		" "	
8300	9700	108		" "	

(Cont., next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual	Piper #3	
				"	
8400	7400	40		Piper #3	
8400	7500	60		"	
8400	7600	63		"	
8400	7700	58		"	
8400	7800	50		"	
8400	7900	47		"	
8400	8000	45		"	
8400	8100	47		"	
8400	8200	56		"	
8400	8300	73		"	
8400	8400	90		Piper #2	
8400	8500	102		"	
8400	8600	104		"	
8400	8700	102		"	
8400	8800	76		"	
8400	8900	77		"	
8400	9000	70		"	
8400	9100	80		"	
8400	9200	78		"	
8400	9300	78		Shammock #2	
8400	9400	78		" #2	
8400	9500	79		" #2	
8400	9600	103		" #2	
8400	9700	110		" #2	
8500	7600	50		Piper #3	
8500	7700	50		"	
8500	7800	45		"	
8500	7900	40		"	
8500	8000	38		"	
8500	8100	38		"	
8500	8200	50		"	
8500	8300	68		"	
8500	8400	82		"	
8500	8500	94		Piper #2	
8500	8600	102		"	
8500	8700	98		"	
8500	8800	95		"	
8500	8900	86		"	
8500	9000	79		"	
8500	9100	77		"	
8500	9200	78		"	
8500	9300	78			
8500	9400	79		"	

(Cont. next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
8500	9500	98		Shamrock #2	
8500	9600	9500		"	
8500	9700	96		"	
8600	8000	36		Piper #3	
8600	8100	38		"	
8600	8200	45		"	
8600	8300	60		"	
8600	8400	80		"	
8600	8500	93		"	
8600	8600	102		"	
8600	8700	87		Piper #2	
8600	8800	90		"	
8600	8900	83		"	
8600	9000	78		"	
8600	9100	78		"	
8600	9200	80		"	
8600	9300	80		"	
8700	8100	36		Piper #3	
8700	8200	39		"	
8700	8300	50		"	
8700	8400	70		"	
8700	8500	87		"	
8700	8600	93		"	
8700	8700	92		"	
8700	8800	88		Piper #2	
8700	8900	82		"	
8700	9000	79		"	
8800	8200	37		Piper #3	
8800	8300	40		"	
8800	8400	63		"	
8800	8500	83		"	
8800	8600	88		"	

[redacted] [redacted]

TABULATION OF ESTIMATED DRILLING DEPTHS

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
9000	9700	80		Shamrock #4	
9000	9800	95		"	
9000	9900	105		"	
9000	10000	100		"	
9000	10100	79		"	
9000	10200	60		Shamrock #3	
9100	9700	75		Outlet	
9100	9800	95		Shamrock #4	
9100	9900	105		"	
9100	10000	102		"	
9100	10100	80		"	
9100	10200	65		Shamrock $3	
9200	9800	90		Shamrock #4	
9200	9900	103		"	
9200	10000	102		"	
9200	10100	82		Shamrock #3	
9200	10200	70		"	
9300	9500	58		Piper #1	
9300	9600	60		"	
9300	9700	70		"	
9300	9800	80		Outlet	
9300	9900	102		Shamrock #4	
9300	10000	103		Shamrock #3	
9300	10100	85		"	
9300	10200	70		"	
9400	9100	60		Piper #1	
9400	9200	58		"	
9400	9300	59		"	
9400	9400	59		"	
9400	9500	57		"	
9400	9600	59		"	
9400	9700	64		Piper #1	
9400	9800	75		Outlet	
9400	9900	88		Shamrock #4	
9400	10000	102		Shamrock #3	
9400	10100	98		"	
9400	10200	76		"	

(Continued, next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
9500	9100	58		Piper #1	
9500	9200	55		"	
9500	9300	55		"	
9500	9400	55		"	
9500	9500	54		"	
9500	9600	58		"	
9500	9700	67		"	
9500	9800	72		Outlet	
9500	9900	93		Shamrock #3	
9500	10000	102		"	
9500	10100	98		"	
9500	10200	68		"	
9600	9200	55		Piper #1	
9600	9300	55		"	
9600	9400	50		"	
9600	9500	50		"	
9600	9600	56		"	
9600	9700	62		"	
9600	9800	78		Shamrock #3	
9600	9900	102		"	
9600	10000	105		"	
9600	10100	90		"	
9600	10200	60		"	
9700	9300	50		Piper #1	
9700	9400	50		"	
9700	9500	47		"	
9700	9600	54		"	
9700	9700	60		"	
9700	9800	90		Shamrock #3	
9700	9900	102		"	
9700	10000	102		"	
9800	9400	45		Piper #1	
9800	9500	44		"	
9800	9600	50		"	
9800	9700	61		"	
9800	9800	90		Shamrock #3	
9800	9900	103		"	
9800	10000	103		"	

(Continued next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
9900	9600	55		Shamrock #3	
9900	9700	66		"	
9900	9800	80		"	
9900	9900	101		"	
9900	10000	105			
10000	9600	60		Shamrock #3	
10000	9700	67		"	
10000	9800	75		"	
10000	9900	90			
10100	9700	58		Shamrock #3	
10100	9800	59		"	
10100	9900	70		"	
10100	10000	80			
10200	9800	40		Shamrock #3	
10200	9900	60		"	
10200	10000	63		"	

TOTAL: 16,000 ft.

The above co-ordinates refer to a certain "Triangulation Point", established by the U.S.G.S., about 500' northerly from the East ¼ Cor. of Sec. 15, Twp. 48N, R. 18W, N.M.P.M., in western Montrose Co., Colorado. This "point" is a capped and labeled iron pipe, set in sandstone at the high point of a ridge in the area concerned. It is marked on the maps accompanying this report.

This Triangulation Point has been arbitrarily chosen as a reference point in this survey and report. Its assumed co-ordinates are 10,000' North, and 10,000' East.

It is uniformly indicated on the attached folio of maps by an equilateral triangle "△".

MEMORANDUM OF AGREEMENT

THIS MEMORANDUM OF AGREEMENT, WITNESSETH:

WHEREAS, L. A. Griffith, Trustee, holds leases on and is the lessee of two mining leases, one dated October 20, 1953, covering thirteen claims from Keith M. Andrews and Donald K. Andrews of Nucla, Colorado, County of Montrose, more particularly described as follows: The following described mining claims located in Red Canyon (or Vixen) mining district in Township 48 North, Range 15 West of the New Mexico Principal Meridian, Montrose County, Colorado, all as more fully described in the Location Certificates which were recorded in the office of the Clerk and Recorder of Montrose County, Colorado, as follows:

Name of Claim	Book and Page in County Recorder's Book at which recorded	
	Book	Page
Shamrock #1	343	8
Shamrock #2	343	9
Shamrock #3	343	10
Shamrock #4	343	11
Shamrock #5	343	21
King Pin #1	343	379
King Pin #2	343	380
King Pin #3	343	381
King Pin #4	343	382
King Pin #5	343	383
King Pin #6	343	384
King Pin #7	343	385
King Pin #8	343	386

and a mining lease dated the 22nd day of October from Keith M. Andrews and Donald K. Andrews of Nucla, Colorado, described as follows: The following described mining claims located in Red Canyon (or Vixen) mining district in Township 48 North, Range 18 West of the New Mexico Principal Meridian, Montrose County, Colorado, all as more fully described in the Location Certificates which were recorded in the office of the Clerk and Recorder of Montrose County, Colorado, as follows:

Piper #1	349	567
Piper #2	349	567
Piper #3	349	568

Copy of the above leases is attached hereto and incorporated as part of this agreement.

AND WHEREAS, L. A. Griffith, Trustee, is desirous of selling an interest in said mining leases to Construction Specialties Company (a Colorado corporation) for the sum of One Thousand Dollars ($1,000.00), receipt of which is hereby acknowledged by L. A. Griffith, Trustee, who does hereby sell and convey an undivided one-half (1/2) interest in each of the above described leases to Construction Specialties Company. All net proceeds from the sale of ores, leases, etc., shall be shared equally between the parties hereto.

Signed and sealed this 25th day of January, A. D. 1954.

L. A. Griffith, Trustee

CONSTRUCTION SPECIALTIES COMPANY

W. E. Griffith, President

F. A. Burns, Vice-President

R. B. Carson, Secretary

AGREEMENT

Permission is hereby granted to L. A. Griffith, Trustee, to assign to Construction Specialties Company, of 2625 Walnut Street, Denver, Colorado, an undivided One-half (1/2) interest in the leases held by L. A. Griffith, Trustee, more particularly described as (a) Lease dated October 20, 1953, leasing Shamrock Claims Nos. 1, 2, 3, 4 and 5 and King Pin Claims Nos. 1, 2, 3, 4, 5, 6, 7 and 8, all of which claims are located in Red Canyon (or Vanadium) mining district in Township 48 North, Range 15 West of the New Mexico Principal Meridian, Montrose County, Colorado.

Signed this _____ day of January, 1954.

Keith M. Andrews

Donald A. Andrews

Witnesses:

_____

_____

(Docket Copy) 700

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
May 20, 1955

By: A. G. Keating

Project Summary Report

1. Docket No. DMEA-3355(Uranium)
Contract No. Idm-E703

Neptune Uranium Corp.

Operator - Lowell A. Griffith Associates (partnership) composed of the following:

Lowell A. Griffith - Box 673, Central City, Colorado
Construction Specialties Co., 2625 Walnut Street, Denver, Colorado
Paul A. Keating, Apt. 5, Mines Park, Golden, Colorado

Property - Shamrock Group of Claims, located in Secs. 14,15,22, and 23, T. 48 N., R. 18 W., consisting of Piper Nos. 1, 2, and 3, Shamrock Nos. 2,3, and 4, and Outlet claims. Montrose County, Colorado

Operator's Property Rights - Lessee

Agreements dated 10-20-53 and 10-22-53

Owner's Consent to Lien dated August 25, 1954
Keith M. Andrews and Donald K. Andrews - Nucle, Colorado.

(Outlet claim is owned by Lowell A. Griffith)

2. Contract dated September 9, 1954 on Form MF-200A (Feb. 1952)
To be completed in 9 months.

Work Authorized:

Wagon drilling 171 holes, 13,500 feet @ $1.30/ft.	$17,550.00
Chemical analyses as required for U_3O_8 and V_2O_5	800.00
Total estimated cost of project	$18,350.00
Government's participation @ 75 percent	$13,762.50

Amendments:

No. 1 - Dated November 24, 1954. Effective as of contract date. Under Exhibit "A" - "Estimated Costs of the Work": Delete - "chemical analysis as required for U_3O_8 and V_2O_5 to a maximum of $800.

Substitute - "Chemical analysis for U_3O_8 and V_2O_5 as required but not to exceed a maximum of 160 samples @ $5.00 each.

[X] Audited

[X] Certified

[illegible] ANALYSIS SHEET - DMEA P[illegible]

Analysis as of April 22 1955
Incl. Voucher for November 1954

[illegible] Actual Cost

[X] Agreed Unit Cos

Name Lowell A. Griffith Associates

Docket No. 3355

State Colorado

Commodity Uranium

Idm-E No. 703

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) Rotary drilling	13500 ft	$18350.00	12350 ft	$16305.00	$16305.00
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify)					
Totals		$18350.00		$16305.00	$16305.00

Prepared by Keating

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
	[illegible]	120
9/22	[illegible]	110
9	[illegible]	100
		220

SEP 2 3 1964

Messrs. Donald K. and Keith M. Andrews
Box 87
Nucla, Colorado

Re: DMEA-3355 (Uranium)
Neptune Uranium Corp.
Shamrock Group
Montrose County, Colorado
Contract Idm-X703

Gentlemen:

Enclosed are copies of a self-explanatory letter of today to the Operator under the subject contract.

This correspondence relates to the Owner's Consent to Lien executed by you on August 25, 1954, under the Defense Minerals Exploration Administration program.

Sincerely yours,

George Fumich, Jr. (ajh)

Acting Director

Enclosures

MMerrithew/mm (9/22/64)
cc: Director's Reading File
Region III
Docket
Code 120M

23263

(Docket Copy) 700

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D. C.

May 20, 1955

By: A. G. Keating

Project Summary Report

1. Docket No. DMEA-3355(Uranium)
Contract No. Idm-E703

Neptune Uranium Corp.

Operator - Lowell A. Griffith Associates (partnership) composed of the following:

Lowell A. Griffith - Box 673, Central City, Colorado
Construction Specialties Co., 2625 Walnut Street, Denver, Colorado
Paul A. Keating, Apt. 5, Mines Park, Golden, Colorado

Property - Shamrock Group of Claims, located in Secs. 14,15,22, and 23, T. 48 N., R. 18 W., consisting of Piper Nos. 1, 2, and 3, Shamrock Nos. 2,3, and 4, and Outlet claims. Montrose County, Colorado

Operator's Property Rights - Lessee

Agreements dated 10-20-53 and 10-22-53

Owner's Consent to Lien dated August 25, 1954
Keith M. Andrews and Donald K. Andrews - Nucle, Colorado.

(Outlet claim is owned by Lowell A. Griffith)

2. Contract dated September 9, 1954 on Form MF-200A (Feb. 1952)
To be completed in 9 months.

Work Authorized:

Wagon drilling 171 holes, 13,500 feet @ $1.30/ft.	$17,550.00
Chemical analyses as required for U_3O_8 and V_2O_5	800.00
Total estimated cost of project	$18,350.00
Government's participation @ 75 percent	$13,762.50

Amendments:

No. 1 - Dated November 24, 1954. Effective as of contract date. Under Exhibit "A" - "Estimated Costs of the Work": Delete - "chemical analysis as required for U_3O_8 and V_2O_5 to a maximum of $800.

Substitute - "Chemical analysis for U_3O_8 and V_2O_5 as required but not to exceed a maximum of 160 samples @ $5.00 each.

Delete foot note 2/ "Claim for reimbursement analysis charges must be supported by a copy of assay return showing costs and results."

Substitute - "Claim for reimbursement for analyses charges must be supported with copy of assay return showing results."

No increase in estimated cost of project.

NOTE:

By mutual agreement dry rotary drilling was substituted for wagon drilling at no increased cost.

Work Completed: November 9, 1954

Rotary drilling 163 holes, 12,350 feet @ $1.30/ft. including chemical analyses of 50 samples	$16,305.00

3. Audit Report of Review: April 5, 1955.

Total cost as billed by contractor	$16,587.10
Exceptions	282.10
Total excepted costs	$16,305.00
Government participation at 75 percent	$12,228.75

Final Field Team Report - March 29, 1955

Final Operator's Report received April 14, 1955

4. Certification dated May 19, 1955.

Ore Estimates:

A small reserve of inferred ore about 0.63 feet thick with an average content of 0.44 percent U_3O_8 estimated at 428 tons delimited by the project drilling.

The drilling also disclosed uranium mineralization measured by radiometric content in 12 holes exceeding 0.10 percent U_3O_8 and 20 holes with uranium mineralization in lesser degree.

An accurate estimate of ore reserves could not be made due to the quality of assay data.

Production:

1. Prior to DMEA participation - from Shamrock No. 3 Claim:- 23.877 tons, average per ton 0.46% U_3O_8 and 2.8% V_2O_5 valued at $1,306.40 1/

2. During DMEA participation - from Piper Triangle Claim:- 33.884 tons average per ton 0.23% U_3O_8 and 2.18% V_2O_5 valued at $1,167.01 1/

1/ (Values include haulage allowance)

3. It is reported that from the Shamrock claim group for the period between completion of the work and January 20, 1955 that about 70 tons of ore were shipped averaging 0.35% U_3O_8 and 2.13% V_2O_5 valued at $3,081.05, including hauling allowance.

Total royalties received to April 30, 1955 - $134.70

5. Comments -

The project was carried on efficiently, operating and technical supervision was good. The quality of monthly and final narrative reports was excellent. The operator conformed to contract requirements regarding saving and analyzing drill cuttings.

The principal rocks of the area consisted of interbedded sandstone and mudstone strata of the lower limb of the sand wash member of the Morrison formation, underlayed by red shale and argillaceous sandstone. The uranium mineralized deposits have been found in the basal sand wash sandstone and are typical of those of the carnotite deposits of the Colorado Plateau. Secondary copper minerals are relatively abundant. The ore is usually high grade associated with carbonaceous material and mineralized logs are common. From an existing drift on the Outlet and Shamrock Claims shipments of some three tons of ore had previously been made. This ore is reported as averaging 0.5 percent U_3O_8 and 2.4 percent V_2O_5. The drift had been run to reach a deposit about 140 feet ahead which had been indicated by probing exploratory drill holes with a Geiger tube. At the time of application the drift (253 feet) had penetrated mineralization. Three exploratory holes were attempted in the vicinity of the drift but did not reach the ore bearing zone. The known ore bodies were in the vicinity of the Shamrock, Piper and Outlet claims and ranged on the order of a few tons to 100 tons. These deposits appear to be mostly small rolls localized around logs, however, there is a possibility of a roughly tabular mineralized mass in old workings southeast of Piper No. 3 claim.

The project drilling was planned on ground where the ore bearing zone was indicated to be at relatively shallow depths, (130 ft.). Of the 163 holes drilled in the completed project - two are in ore, (based on chemical assay data), 9 are in ore grade material but less than 1 foot thick (based on USGS gamma-ray logging), 9 are weakly mineralized, being less than 0.10 percent U_3O_8, but more than 0.02 percent U_3O_8 (based on gamma-ray logging) and 143 holes were barren.

A successful but small production of high grade ore should be possible from the area surrounding the two "ore holes". Assay data is not sufficient to properly calculate the possibilities. No further exploration with Government assistance is recommended in the project area.

A. G. Keating

A. G. Keating

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

September 9, 1964

Re: DMEA-3355 (Uranium)
Neptune Uranium Corp.
Shamrock Group
Montrose County, Colorado
Contract Idm-E703

Messrs. Donald K. and Keith M. Andrews
Box 87
Nucla, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely yours,

George C. Selfridge

George C. Selfridge, Chief
Division of Exploration Operations

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DATE
9/21/64
100
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120
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MME Form 63
Revised 3-62

DMEA-3355
Idm-E703

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

From October 1963, to September 9, 1964

1. ~~Since~~ , has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes ☐ No ☒

From October 1963, to September 9, 1964

2. ~~Since~~ , has there been any production from the land subject to the contract? Yes ☐ No ☒

A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value
	None	

B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity		Estimated Grade	Location
Ore	None	Tons		
Concentrates	None	Tons		
Other	None	Tons		

3. Since , has any production been transported through workings (see of contract)? Yes ☐ No ☒

A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value
None		

Submitted by:

Name Donald K. Andrews Title PARTNER

Address Box 87 Nucla, Colo. Date Sept. 15, 1964

Building 20 - Federal Center
Denver 25, Colorado

80225

DATE		CODE
9/30	Murphy	500
September 24, 1963		
		3.20

Lowell A. Griffith Associates
c/o Neptune Uranium Corporation
Uravan, Colorado

Re: DMEA-3355 (Uranium)
Contract Idm-E703
Lowell A. Griffith Associates
(Shamrock Group)
Montrose County, Colorado

Gentlemen:

Enclosed is a copy of the Report of Royalty Review on the subject contract dated September 19, 1963, covering the period June 15, 1960, through September 13, 1963.

Please note that the balance due the Government according to this Report of Review is $0.59. Your prompt payment of $0.59 to this office will be appreciated.

Sincerely yours,

Original signed by

Hugh M. Connors
Acting Field Officer, OME
Region III

Enclosure

cc Chief, Division of Field Operations, OME
E. D. Talbert, Acting Chief
Contract Administration and Audit Division
Royalty Corres. Idm-E703
Chron
HMC/lm

Building 20 - Federal Center
Denver 25, Colorado
80225

September 24, 1963

Memorandum

To: Fiscal Section, Division of Administrative Services
Office of the Secretary, Department of the Interior
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: DMEA-3355 (Uranium)
Contract Idm-E703
Lowell A. Griffith Associates
(Shamrock Group)
Montrose County, Colorado

Attached is the original Report of Royalty Review dated September 19, 1963, on the subject property covering the period June 15, 1960, through September 13, 1963.

Original signed by

Hugh M. Connors

Attachments

cc Chief, Division of Field Operations, OME
E. D. Talbert, Acting Chief
Contract Administration and Audit Division
Royalty Corres. Idm-E703
Chron
HMC/lm

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
		220

SEP 19 1963

Memorandum

To: Acting Field Officer, Region III

From: E. D. Talbert, Chief (Signed) E. D. Talbert
Contract Administration and Audit Division

Subject: DMEA-3355 (Uranium)
Lowell A. Griffith Associates
Shamrock Group of Claims
Montrose County, Colorado
Contract Idm-E703

The original and two copies of a Report of Royalty Review covering the subject contract are enclosed. If you concur in the facts stated therein, please make the following distribution:

(a) Original to the Fiscal Section, Division of Management Operations, Office of the Secretary, U. S. Department of the Interior, Washington, D. C. 20240;
(b) One copy for the Operator; and
(c) One copy for your files.

As evidence of your concurrence, a copy of your letter transmitting the Operator's copy should be furnished this Division. If for any reason you do not concur, the original and both copies of the report should be returned to this Division with your comments.

Enclosures

EDTalbert/ama 9-18-63

cc:
Docket
Director's Reading File
CA & A Division
Fiscal Section

43683

UNITED STATES
ATOMIC ENERGY COMMISSION
GRAND JUNCTION OPERATIONS OFFICE
GRAND JUNCTION, COLORADO

OME
DEPARTMENT OF THE INTERIOR
APR 2 1961
REGION III
DENVER, COLORADO

IN REPLY REFER TO:

POR:CAR

March 29, 1961

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O. M. E.
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DATE	INITIALS	CODE
4-5	gad	VVO
4/5	[illegible]	800
	~~Murphy~~	~~500~~
		220

Mr. Hugh M. Connors
Acting Field Officer, OME, Region III
Office of Minerals Exploration
U. S. Department of the Interior
Building 20 - Federal Center
Denver 25, Colorado

Re: DMEA 3355 (Uranium)
Contract Idm E703
Lowell A. Griffith Associates
Neptune Uranium Corporation
Shamrock Group of Claims
Montrose County, Colorado

Dear Mr. Connors:

It appears that the Shamrock claim group which produced ore in 1960 is not the same claim group which is subordinated to the Government. The enclosed production records indicate two separate entities as follows:

Entity 1. The Shamrock claim group of Union Carbide Nuclear Corp. located in T. 48 N., R.17 W., Uravan district (west end of Club Mesa). This group produced during 1960.

Entity 2. The Shamrock claim group of Neptune Uranium Corp., located in T. 48 N., R. 18 W., Paradox district (Carpenter Flats). This group apparently has not produced since the second quarter 1958. This Neptune Uranium group is the one subordinated to the Government. Four cards are submitted for this group: Piper 1, Piper 3, Shamrock, and Shamrock 3.

Mr Selfridge (2)

Very truly yours,

Charles A. Rasor

Charles A. Rasor, Chief
Ore Reserves and Production
Analysis Branch
Production Evaluation Division

Attachments:
1. Production Record - Shamrock, Uravan district
2. Production Record - Piper 1, Paradox district
3. Production Record - Piper #3, Paradox district
4. Production Record - Shamrock, Paradox district
5. Production Record - Shamrock #3, Paradox district

Property	Owner	District	State
Shamrock	UCN	Uravan	Colorado

Group	Controller	Code No.	Locality	County	Mineralized Area
	UCN		Club Mesa	Montrose	Carnotite, high & low grade

Claims Included	Shipper	Method of Discovery	Code No.	Section	Cert. No.	Comp. Estimated	Company Name	Date	Author
	UCN	Pot. dig.	5	29	-	Yes / No	U	34	A

Host Formation & Age	Fm. No.	Type of Deposit	T	R	S	No. of Horizons	Cutoff	Length	Width	Thickness
Jurassic Salt Wash	51		48N	17W	NM		2.5' @ .25	37	1	3.5
								34		5.8
								76		

Date	Reference	Indicated Tons Ore	Indicated %U_3O_8	Indicated %V_2O_5	Inferred Tons Ore	Inferred %U_3O_8	Inferred %V_2O_5	Period	Mill or G.S.	Shipper	Production Tons Ore	Production %U_3O_8	Production %V_2O_5	Production %$CaCO_3$	Comments
								3rd 1/4 '57	U	UCN	68	.31	1.30		
4-1-58	PPL-Bro-Gayle 7-18-58	450	.30		800	.30		4th 1/4 57	U	UCN	82	.29	1.74		
7-1-58		0			781	.30		2nd 1/4 58	U	"	469	.42	1.86		
[illegible]		0			179	.30		3rd 1/4 58	R16 U	"	602	.39	1.50		R - 316 U - 286
1-1-59		0			0			4th 1/4 58	U	"	518	.27	1.24		
11-1-59	PPL-Cole 9-12-60	0			0			2nd 1/4 59	U	"	36	.25	.95		TTD 7-1-59 1775 @ 0.35
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	570	.40	[illegible]	2nd 1/4 60	U	"	625	.29	1.19		
[illegible]	[illegible]	620	.21	.92	840	.21	.88	3rd 1/4 60	U	"	940	.27	1.27		
[illegible]		195	.21	.92	840	.21	.88	4th 1/4 60	U	" + J. Mayfield	425	.29	1.36		

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Lat. Letter of Block	District	Locality
9 1 2 2 1	4 2 1 7 4 2 1	2 1 7 4 2 1

Property	Owner	District	State
Piper #1	D.K. Andrews	Paradox	Colorado

Group	Controller	Code No.	Locality	County
Kingpin Piper, Shamrock	Neptune U. Corp.		Carpenter Flats	Montrose

Claims Included	Shipper	Code No.	Method of Discovery	Section	Mineralogy
	Griffith Uran. Co.		Pit Drill	15	Carnotite, high V, low lime

Host Formation & Age	Fm. No.	Type of Deposit	T	R	N.M.
Salt Wash			48N	R18W	N.M.

Sec. No.	Sec. Subdivision	Lat.	Long.	Elev.	Depth
32		38°	108°	7000	0

Date	Reference	Indicated Tons Ore	Indicated %U3O8	Indicated %V2O5	Inferred Tons Ore	Inferred %U3O8	Inferred %V2O5	Period	Type of Ent.	Shipper	Production Tons Ore	%U3O8	%V2O5	Recovery	Remarks
								4th 1/4 '54 2-28-55	U	Griffith Uran. Co.	50	.25	1.85	-	U 41 N 9
								1st 1/4 3-55	G.S. U		132	.28	2.05	-	G.S. 118 U 14
9-1-55	Co. Drill Map & Geol. Bulletin #716	400	.30	1.50	800	.30	1.50								
9-55		387	.30	1.51	800	.30	1.50	3rd 1/4 Cal '55	U	Neptune Uran	13	.33	1.92		
[illegible]-55		281	.31	1.53	800	.30	1.50	4th 1/4 Cal '55	U	Neptune Uran.	105	.28	1.45	-	
3-56		268	.31	1.48	800	.30	1.50	1st 1/4 Cal '56	U	" "	18	.38	3.84	-	
6-56		187	.39	1.67	880	.30	1.50	2nd 1/4 Cal 56	N	Neptune U. Corp.	81	.16	1.04		
1-57	New Definitions	987	.31	1.53	—			1st 1/4 58	N	" "	10	.21	1.47		Total to Date 7-1-58 427 @ .28 & 2.00
4-1-58		977	.31	1.53	—			2nd 1/4 58	N	" "	23	.17	.80		
7-1-58		954	.31	1.53	—										

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INITIALS
DATE
CODE

Card No.

Area No. 2 1 7 4 2 1 | 4 2 1 7 4 2 1 | 2 1 7 4 2 1

1st Letter of Name | District | Locality | Yes | No Operating | Anotheite | Non-Anotheite

Property: Piper # 3

Owner: D. K. Andrews, Neptune Uran. Co.

District: Paradox

State: Colorado

Mining Method | Self/Yes | Mining: B

Group: Kingpin, Piper, Shamrock

Controller | Code No.

Locality: Carpenter Flats

County: Montrose

Mineralogy Type: Carnotite, high V, low lime | Sec. No. 14 | Lev. A

Claims Included

Shipper

Method of Discovery: Pit. drlg. | Code No. 5

Section: 15

Cert. No. C-32 | Mining Known Yes | No | Mining Valid: his | Class | Access A

Most Persistent Age: Salt wash | Fm. No. 51

Type of Deposit: DMEA denied

T 48N | R 18W | B NM

Size of Deposit | Detail

Dolomite | Average | Portion | Depth 50 | 100 | Thickness 1 | 2

Date	Reference	Indicated Tons Ore	Indicated %U3O8	Indicated %V2O5	Inferred Tons Ore	Inferred %U3O8	Inferred %V2O5	Period	Mill of O.S.	Shipper	Production Tons Ore	%U3O8	%V2O5	%CaCO3	Comment
4-1-56	DMEA 3-55 Pulse 7-11-56 oriented on 2" [illegible] 4.25 Ore # 1089	0			900	.22	1.30	3rd 1/4 56	U	Neptune Uran. Corp	6	.24	1.30		
10-1-56		0			844	.22	1.30	2nd 1/4 57	N	" " "	161	.27	.89		
7-1-57		0			733	.22	1.30	3rd 1/4 57	N U	" " "	164	.26	1.14		
1[illegible]-57		0			569	.22	1.30	4th 1/4 57	U N	" " "	155	.28	1.37		U - 90 N - 65
1-1-58		0			414	.22	1.30	1st 1/4 58	U N	" " "	146	.27	1.30		U - 11 N - 135
4-1-58		0			268	.22	1.30	2nd 1/4 58	U N	" "	52	.22	1.16		U - 7 N 45
7-1-58		0			216	.22	1.30								

I.T.O.D. 7-1-58 688 @ 0.266 & 1.170 V2O5

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Shamrock | Con T.R.K. Andrews | Paradox | Colorado | | B
Carpenter Flats | Montrose | Carpenter High V. Ionline | 19 | A
Griffith Union | Pot-Drill | 14 | 9a | Yes | No | U | 12a | A
Sol T Wash | 48N | 11W | N.M. | 50 | 1
100 | 72

Date	Reference	Indicated Tons	Indicated Ore	Indicated % U3O8	Indicated % V2O5	Inferred Tons	Inferred Ore	Inferred % U3O8	Inferred % V2O5	Period	Qtr or Q.S.	Shipper	Production Tons	Production Ore	Production % U3O8	Production % V2O5	Comments
										2nd 1/4 6-54	U	Griffith	3	.19	1.58		
										3rd 1/4 11-54	U		21	.89	4.14		
										4th 1/4 '54 8-55	U	Griffith	11	.61	2.37		
										1st 1/4 2-55	U		14	.29	1.61		
9-1-55	Co. Drill Maps + Calc. #218 Barton	150	.30	1.50		250	.30	1.50									
1/1/57	New Definitions	390	.30	1.50		0				3rd 1/4 Cal 56	U	Neptune U.Co	10	.37	2.80		TTO 10-1-56 59@ .607 - 2.852

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Page No. 2 1 7 4 2 1 4 2 1 7 4 2 7 2 1 7 4 2 1

Yes / No Operating

Lease No.

Lease Letter of Name | District | Locality

Property: Shamrock #3

Owner: K.M. & D.K. Andrews

District: Paradox

State: Colorado

Mining Methods | Dev/Yes | Mining: B

Group

Contractor | Code No.

Locality: Carpenter Flats

County: Montrose

Mineralogical Type: Carnotite, high V, low limes | Dev. No. 14 | Dist. A

Claims Located

Shipper: Griffith Uran. Neptune Uran. Griffith & Thomas

Method of Discovery: Put. drlg.

Code No. 5

Section: 1

Cert. No. 3.2 | Stake Unclassified Yes No | Delivery Point | Office | Area A

Host Formation & Age: Salt Wash

Fm. No. 51

Type of Deposit

T 48N | R 18W | B NM

No. of Horizons | Cutoff

Thickness: Minimum .50 | Average | Maximum 100 | Total 1 2

Date	Reference	Indicated Tons Ore	Indicated %U3O8	Indicated %V2O5	Inferred Tons Ore	Inferred %U3O8	Inferred %V2O5	Period	Mill or B.S.	Shipper	Production Tons Ore	%U3O8	%V2O5	%CaCO3	Comments
								2nd 1/4 54	U		16	.20	1.50	-	
								4th 1/4 54	U N	Griffith & Thomas Griffith Uran.	72	.38	2.16	-	U - 40 N 3.2
								1st 1/4 55	U		6	.46	2.39		
10-1-55	Co. drill maps + calc. #219 - Barton	200	.30	1.50	200	.30	1.50	3rd 1/4 55	U	Griffith Uran.	3	.71	3.45		
10-1-55		197	.30	1.48	200	.30	1.50	4th 1/4 56	U	Neptune Uran.	75	.42	1.68		
1-1-57	New Det.	321	.30	1.50	0			1st 1/4 57	U	" "	37	.31	1.50		PPD 4-1-57 200 @ .395 - 1.886
4-1-57		214	.30	1.50	0										

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DATE | INITIALS | CODE

Building 20 - Federal Center
Denver 25, Colorado

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O. M. E
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DATE	INITIALS	CODE
3/27	gad	110
3/27	[illegible]	800
3/27	Murphy	~~500~~
		220

March 24, 1961

Charles A. Rasor, Chief
Ore Reserves & Production Analysis Branch
Production Evaluation Division
U. S. Atomic Energy Commission
Grand Junction Operations Office
Grand Junction, Colorado

Re: DMRA 3355 (Uranium)
Contract Idm E703
Lowell A. Griffith Associates
Neptune Uranium Corporation
Shamrock Group of Claims
Montrose County, Colorado

Dear Mr. Rasor:

In checking the uranium production for the year 1960 it is noted that uranium was produced from the Shamrock claims during the second, third, and fourth quarters of the year.

By virtue of the captioned contract, production from the Shamrock Group of claims is subordinated to the Government. The Shamrock Group of claims covered by this contract are located in Sections 14, 15, 22, and 23, Township 48 North, Range 18 West.

Will you please advise if the Shamrock claims which produced ore in 1960 are the same Shamrock claims subordinated to the Government.

Yours very truly,

Original signed by

Hugh M. Connors
Acting Field Officer, OME
Region III

HMC/lm
cc Chief, Division of Field Operations, OME
cc Royalty Corres E703
Chron

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O. M. E.
RECEIVED JUL 5 1960

DATE	INITIALS	CODE
7-5	gad	VNO
7/5	[illegible]	800
7/5	[illegible]	500
		225

Building 20 - Federal Center
Denver 25, Colorado

June 29, 1960

Memorandum:

To: Fiscal Section, Division of Administrative Services
Office of the Secretary, Department of the Interior
Washington 25, D.C.

From: Hugh M. Connors, Acting Field Officer, OME, Region III

Subject: Docket No. DMRA-3355 (Uranium)
Contract No. DMa-E703
Lowell A. Griffith Associates
Neptune Uranium Corporation
(Shamrock Group of Claims)
Montrose County, Colorado

Attached is the original of the Report of Royalty Review on the subject contract covering the period January 19, 1956, through June 14, 1960.

Original signed by

Hugh M. Connors

Attachment

HMC/lm
cc: Chief, Division of Field Operations (2)
Royalty Corres. E703
Chron

OFFICIAL FILE COPY
O. M. E.
RECEIVED JUL 5 1960

DATE	INITIALS	CODE

Building 20 - Federal Center
Denver 25, Colorado

June 29, 1960

Mr. W. E. Griffith, President
Neptune Uranium Corporation
2625 Walnut Street
P. O. Box 927
Denver 1, Colorado

Re: Docket No. RMRA-3355 (Uranium)
Contract No. IBm-E703
Lowell A. Griffith Associates
Neptune Uranium Corporation
(Shamrock Group of Claims)
Montrose County, Colorado

Dear Mr. Griffith:

Enclosed is your copy of the Report of Royalty Review covering the period January 19, 1956, through June 14, 1960.

Yours very truly,

Original signed by

Hugh M. Connors
Acting Field Officer
OME, Region III

Enclosure
HMC/lm

cc: Chief, Division of Field Operations (2)
E. D. Talbert, Acting Chief
Contract Administration and Audit Division
Royalty Corres. E703
Chron

OFFICIAL FILE COPY
O. M. E.
RECEIVED JAN 25 1960

DATE	INITIALS	CODE
1-25	gad	220
1-25	Fisher	800
1-26	Murphy	~~500~~
		225

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

January 22, 1960

Mr. L. A. Griffith
c/o Neptune Uranium Corporation
Uravan, Colorado

Re: Docket No. DMEA 3555 (Uranium)
Contract No. Idm-E703
Neptune Uranium Corporation
(Shamrock group)
Montrose County, Colorado

Griffith

Dear Mr. Griffith:

In reference to the "Certification by the United States of America of a Discovery or Development under an exploration Project Contract" and the instructions in the Washington Office letter of transmittal of the Certification on the captioned project, please indicate your answer to the following questions and return one copy of the questionnaire immediately to this office.

Very truly yours,

Original signed by

J. W. Townsend
Executive Officer, OME
Field Team, Region III

1. Has the property been sub-leased or any change made in ownership other than this office has been notified? Yes ___ No___. If yes, please furnish details of the transaction on a separate sheet and include a true or signed copy of any instrument that was executed in conjunction with the matter.

2. Has there been production from the land subordinated under the referenced contract since January 1, 1959 ? Yes___ No___. If yes, and shipments made, who was the purchaser?_____

3. Is any of the following material stockpiled? Yes___ No___.

(a) Ore, Tons_____ Estimated grade_____
(b) Concentrates, lbs._____ Estimated grade_____
(c) Low grade ore, tons_____ Estimated grade_____
Place stockpiled_____

Signed_____

Title_____ Date_____

HMC:ltm Chmn. Op. Comm., Roy. Corres. E703,Chron.

NEPTUNE URANIUM CORPORATION

Denver Office
2625 Walnut St.
P. O. Box 927, Denver 1
Mine Address
Uravan, Colo.

OME
DEPARTMENT OF THE INTERIOR
DEC 29 1959
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 31 1959

DATE	INITIALS	CODE
12/31	RCW	225
1/4	[illegible]	800
	Murphy	500
		225

December 28, 1959

Mr. J. W. Townsend
Executive Officer, OME
Field Team, Region III
Building 20
Federal Center
Denver 25, Colorado

Re: Docket No. DMEA 3355 (Uranium)
Contract No. Idm-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Dear Mr. Townsend:

I wish to acknowledge receipt of letters addressed to me concerning the above referenced Docket.

You refer to conversations held with you concerning Andrews claims. You apparently have me confused with my brother, L. A. Griffith, a Vice-President of Neptune Uranium Corporation and Mine Superintendent while operations were underway. I have not had the opportunity of meeting you or discussing any matters with you.

Mr. L. A. Griffith's present Post Office address is c/o Neptune Uranium Corporation, Uravan, Colorado. Copies of your letters have been furnished him.

I wish to officially state to you, however, as President and General Manager of Neptune Uranium Corporation, that we considered the Andrews claims valid while we held leases on them.

To my knowledge one claim has been located on top of the Andrews claim and covering a portion of the Outlet Claim located and held by Neptune Uranium Corporation.

Yours very truly,

NEPTUNE URANIUM CORPORATION

W. E. Griffith

W. E. Griffith
President and General Manager

Chmn (2)

WEG/dlj
cc: L. A. Griffith
Uravan, Colorado

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 23 1959

DATE	INITIALS	CODE
12/23	RCW	225
"	CEF	800
12/28	[illegible]	[illegible]
		225

Building 20 - Federal Center
Denver 25, Colorado
December 21, 1959

CERTIFIED MAIL

Mr. W. E. Griffith, President
Neptune Uranium Corporation
2625 Walnut Street
P. O. Box 927
Denver 1, Colorado

Re: Docket No. DMEA 3355 (Uranium)
Contract No. I6m-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Dear Mr. Griffith:

We have had no advice from you concerning the present status of the land subordinated to the Government under the captioned contract since your visit to this office September 4, 1959.

Will you please advise what disposition was made of the Andrews interests in the subordinated land. We would also like to know how many of the original claim locations were not valid, and were they relocated or "jumped".

Very truly yours,

Original signed by

J. W. Townsend
Executive Officer, OME
Field Team, Region III

HMC:ltm

cc: Chmn. Op. Comm. (2)
Roy. Corres.
Chron.

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 20 1959

DATE	INITIALS	CODE
11-20	gad	VVO
11/20	EW	800
	~~Mauffer~~	~~[illegible]~~
		22J

Building 20 - Federal Center
Denver 25, Colorado
November 17, 1959

Mr. W. E. Griffith, President
Neptune Uranium Corporation
2625 Walnut Street
P. O. Box 927
Denver 1, Colorado

Re: Docket No. DMMA 3355 (Uranium)
Contract No. I6m-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Dear Mr. Griffith:

On your visit to this office on September 4, 1959, you advised that Andrews interests in the subordinated land had been transferred several times, and that the original locations of some of the claims were not valid and might be "jumped".

We are most anxious to receive the letter from you that you promised to write us.

Very truly yours,

Original signed by

J. W. Townsend
Executive Officer, CMX
Field Team, Region III

HMC:ltm

cc: Chmn. Op. Comm. (2)
Roy. Corres. E703
Chron.

224 New Customhouse
Denver 2, Colorado
July 18, 1958

7/21 C 220
" ~~MC~~ 700

Mr. W. E. Griffith, President
Neptune Uranium Corporation
2625 Walnut Street
P. O. Box 927
Denver 1, Colorado

Re: Docket No. DMEA 3355 (Uranium)
Contract No. Idm-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Dear Mr. Griffith:

We have received your check for $19.53 enclosed with your letter of March 14, 1958. The check has been credited to the royalty account of the captioned contract.

Enclosed for your information is a photo copy of Annex II which is made a part of Contract Idm-E703. You will note in Section (c) that the Government's royalty on production sold, "shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold . . ." In essence then, the interpretation expressed in the last sentence of your letter is correct so long as you receive proceeds in the form of haulage allowance on production subject to DMEA royalty.

Under the terms of the contract, therefore, this office has no alternative but to continue to request from Neptune Uranium Corporation periodically the balance of royalties due on production sold when the ore purchaser computes and pays royalties to this office for you which excludes the Government's royalty on any bonuses, premiums, allowances, or other benefits from DMEA production.

Please feel free to contact this office if you believe that further explanation will add to your understanding of the haulage allowance and how it applies to the payment of royalty.

MHM:dp
cc: Chmn. Op. Comm. 2
Royalty File E703
DMEA/GJ
Chron.

)w/cy of
)Operator's ltr.
)dated 7-14-58

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

NEPTUNE URANIUM CORPORATION

DMEA
DEPARTMENT OF THE INTERIOR
JUL 15 1958
REGION III
DENVER, COLORADO

Denver Office
2625 Walnut St.
P. O. Box 927, Denver 1

Mine Address
Uravan, Colo.

Officers & Directors
W. E. Griffith, Pres. & Director
L. A. Griffith, V. Pres. & Director
F. A. Burns, Treasurer
R. B. Carson, Secy. & Director
Clark F. Barb, Director

Paul H. Keating, Consulting Geologist
Karl C. Brauns, Counsel

14 July 1958

Mr. J. W. Townsend
U. S. Department of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3355 (Uranium)
Contract No. Idm-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Dear Mr. Townsend:

This will acknowledge receipt of your letter dated July 8, 1958, transmitting copy of your letter dated April 30, 1958.

I have examined our files and do not find copy of the original contract entered into between Paul H. Keating, Attorney in Fact for Lowell A. Griffith Associates, and the DMEA. The files of Neptune Uranium Corporation are split between this office, our attorney's office, the auditor's office, and Paul H. Keating's office.

I am paying the additional royalty under protest for the following reasons:

(1) I cannot see how the hauling, which is a service charge, can be construed as a proper evaluation of the ore produced. The ore is worth exactly the same, whether it is hauled one mile, or one hundred miles.

(2) Where the hauling is performed by an outside hauler, or by the mill purchasing the ore, there is no allowance made to the DMEA, nor is one claimed for a portion of the hauling charge.

(3) The hauling allowance @ 6¢ per mile is nominal only, and represents only a fraction of the cost of hauling the ore from the mine to the mill.

(4) It is my opinion that the enabling legislation by Congress did not intend the nominal hauling allowance to be considered as a part of the value of the ore.

I suggest that you review the original contract, and if the original contract provides that you are to be paid 5% of the service charge of hauling, then I will consider the matter to be closed.

Yours very truly,

NEPTUNE URANIUM CORPORATION

W. E. Griffith

W. E. Griffith
President

WEG/eg

cc: Prof. Paul H. Keating
Mr. Karl Brauns
Mr. L. A. Griffith

P.S.

REG III NOTE:
NEPTUNE URANIUM CORPORATION, CHECK NO 412, DATED JULY 10, 1958 IN THE AMOUNT OF $ 19.53 NOTED AS "PAID UNDER PROTEST" WAS ENCLOSED WITH THIS LETTER.

WEA

PHOTO CVTO
CHAIR OPR COMM-2
DMEA/G. JET

ORIGINAL FILE COPY
DMEA
RECEIVED JUL 11 1958
DATE | | TIME
7/11 | C | 220
7/14 | | 800
| | 700

224 New Customhouse
Denver 2, Colorado

July 8, 1958

CERTIFIED MAIL

Mr. W. E. Griffith, President
Neptune Uranium Corporation
P. O. Box 927
Denver 1, Colorado

Re: Docket No. DMEA 3355 (Uranium)
Contract No. I(m-)703
Neptune Uranium Corporation
(Shamrock group)
Montrose County, Colorado

Dear Mr. Griffith:

Enclosed is a photo copy of our letter dated April 30, 1958, for which we have received no reply.

We would appreciate your immediate attention to this matter.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer,
DMEA Field Team, Region III

Enc.

MHM:bh
cc: Roy. File E-703
Sec. Op. Comm.(2)
DMEA/Gr. Jct.
Chron.

OFFICIAL FILE COPY
D M E A
RECEIVED 5 9 58
DATE

224 New Customhouse
Denver 2, Colorado
April 30, 1958

CERTIFIED MAIL

Mr. W. E. Griffith, President
Neptune Uranium Corporation
P. O. Box 927
Denver 1, Colorado

Re: Docket No. DMEA 3355 ~~(Uranium)~~
Contract Idm-E763
Neptune Uranium Corporation
(Shamrock group)
Montrose County, Colorado

Dear Mr. Griffith:

This office has received settlement sheets and royalties on the below-listed production, which has resulted in a net underpayment of $19.53.

Liquidation Number	Dry Tons	Royalty Due	Royalty Paid
11056	6.759	$ 9.36	$ 8.80
110108	13.860	13.79	12.66
12 55	14.991	25.34	24.11
12 116	29.213	55.53	53.15
10 73	29.692	61.64	59.20
2054	28.012	56.06	53.75
20105	13.462	13.66	12.55
3039	9.836	12.82	12.82
3038	37.569	50.52	47.42
3060	25.527	41.54	39.41
4047	38.072	46.92	43.78
		$387.18	$367.65

The underpayment in each instance is due to your ore purchaser omitting haulage allowance in computing the value of ore for DMEA royalty purposes. Accordingly, we request payment of $19.53 due on the above listed production, and suggest that you advise your ore purchaser that DMEA royalties are to be based on the total value of production including all bonuses, premiums, and allowances.

Your check for $19.53 should be made payable to Defense Minerals Exploration Administration, and sent at once to the Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado.

Yours very truly,

Original signed by
E. N. HARSHMAN
E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

MHM;hmh

cc: Royalty E703
Sec. Roy. Comm. (2)
DMEA/G.Jct.
Chron

DMEA
RECEIVED APR 4 1958

224 New Customhouse
Denver 2, Colorado

April 1, 1958

Memorandum

To: M. H. Salsbury

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3355 (Uranium) Contract Idm-E703, Neptune Uranium Corporation (Shamrock Group) Montrose County, Colorado

Enclosed is a copy of a letter, dated March 27, 1958, from D. Ornella, Vanadium Corporation of America, which is in reply to our inquiry of March 24.

We have checked our records and find that the production covered by Settlement Sheet No. 11-0-56 was credited in error to the royalty account for Contract Idm-E452, Uranium Development Corporation. The production and royalties thereon, therefore, should be credited to the royalty account of the subject contract and will enable you to reconcile production figures of the A.E.C. to those maintained by this office.

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosure

MEH:jy

cc: Semiannual Report File E703
Royalty File E452
Sec. Op. Comm. (4)
Hasler
Chron.
} w/copy of Ornella's ltr. dtd. 3/27.

VANADIUM CORPORATION OF AMERICA

DURANGO, COLORADO

March 27, 1958

DMEA
DEPARTMENT OF THE INTERIOR
MAR 28 1958
REGION III
DENVER, COLORADO

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: Mr. E. N. Harshman

Re: Docket DMEA 3355(Uranium)
Contract Idm-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Gentlemen:

This is in reply to your letter of March 24th subject as above.

To substantiate the total of 20.62 tons as reported by the AEC, we enclose herewith five copies of the additional settlement sheet number 11-0-56.

Very truly yours,

VANADIUM CORPORATION OF AMERICA

D. Ornella
Mines Auditor

eek
5 Encl.

SAR E 703

224 New Customhouse
Denver 2, Colorado

March 24, 1958

Vanadium Corporation of America
Naturita,
Colorado

Attention: Accounting Department

Re: Docket DMEA 3355 (Uranium)
Contract Idm-E703
Neptune Uranium Corporation
(Shamrock Group)
Montrose County, Colorado

Gentlemen:

Enclosed is a photo copy of your Settlement Sheet No. 11 0108, with load detail, for ore purchased from the above-captioned Operator. This office received your check for $12.66 as royalties on this production.

The Settlement Sheet covers the purchase of 13.8595 tons of ore. A routine check of our production records with those maintained by the Atomic Energy Commission indicates that the AEC was provided with a figure of 20.62 tons for this settlement.

Please advise us of the number of tons that should be recorded for this settlement.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

Enclosure
MHM:jy
cc: Semiannual Rpt. File E703)
Sec.Op.Comm.(2))
DMEA,G.Jet.) w/copy of Salsbury's
Hasler) memo, dtd. 3/18.
Chron.

DMEA
DEPARTMENT OF THE INTERIOR

MAR 19 1958
REGION III
DENVER, COLORADO

P. O. Box 360
Grand Junction, Colorado

March 18, 1958

Memorandum

To: M. H. Marshall

Through: W. H. King

From: M. H. Salsbury

Subject: Docket No. DMEA 3355 (Uranium), Contract Idm-E 703, Neptune Uranium Corporation (Shamrock and Piper claims), Montrose County, Colorado.--Reconciliation of production.

Please refer to Robertson's memo to you dated March 5, 1958, and King's memo to DMEA/Grand Junction for attention of H. F. Robertson dated March 11, 1958.

So far as can be determined from data available to us, the discrepancy in the tonnage on Liquidation no. 11 108, shipped in November 1957, arises either from a failure on the part of the subject operator to report a shipment of 6.76 tons, or an error on the part of the Vanadium Corporation of America office.

The A.E.C. production figure is based on a summary of ore receipts furnished by the mill office, and is shown as 20.62 tons. This is the accumulated tonnage shown on the load detail furnished by the operator with the settlement sheet for liquidation no. 11 108, and presumably refers to the total of all shipments made in November 1957.

However, there is a possibility of error on the part of the mill office. Copies of settlement sheets are also furnished to the A.E.C. but we could not find a settlement sheet for November in the file other than the same one furnished DMEA which shows 13.8595 tons. The A.E.C. does not ordinarily check settlement sheets against the summary of ore receipts furnished by the mills.

The matter might be cleared up through inquiry of the operator and/or the Vanadium Corporation of America mill office.

M. H. Salsbury

M. H. Salsbury,
Mining Engineer

MHS/bh

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 16 1957

DATE	INITIALS	CODE
12/16	gb	220
12/17	[illegible]	800
"	[illegible]	700

224 New Customhouse
Denver 2, Colorado

December 12, 1957

Mr. W. E. Griffith, President
Neptune Uranium Corporation
P. O. Box 927
Denver 1, Colorado

Re: Docket DMEA 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Shamrock Group), Montrose County, Colo.

Dear Mr. Griffith:

This office has received settlement sheets and royalties of $12.66 for production covered by Liquidation Number 11 0108, Vanadium Corporation of America, purchaser.

Royalty on DMEA production shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold. We note that the royalty submitted was computed on an ore value exclusive of Haulage Allowance. Such method of computation has resulted in a net underpayment of $1.13.

Your check for $1.13 should be made payable to Defense Minerals Exploration Administration and sent at once to the Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado.

For future sales, we recommend that you inform your ore purchaser of the correct manner for computing DMEA royalties.

Very truly yours,

Original signed by
W. H. KING

W. H. King
Executive Officer, DMEA
Field Team, Region III

MHM/vj

cc: Royalty File E703
Sec. Opr. Comm. (2)
DMEA/G.Jct.
Marshall
Chron.

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 16 1957

DATE	INITIALS	CODE
1-16	cw	220
1/16	[illegible]	800
	G.	225

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

January 14, 1957

Mr. Paul Keating
P. O. Box 163
Golden, Colorado

Re: Docket DMEA 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Shamrock Group), Montrose County, Colorado

Dear Mr. Keating:

We have received, made copies, and return herein your personal copy of the following:

1. Letter dated January 7, 1957 from W. E. Griffith, President, Neptune Uranium Corporation, to Lakeside Mining Company, advising that the judgement of Civil Action No. 7440 was made in favor of the plaintiff, Neptune Uranium Corporation and against Radium King Mines, Inc.

2. Judgement of Civil Action No. 7440 referred to in item 1.

We thank you for furnishing us with this information.

Yours very truly,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM/vj

cc: Royalty File E703
Corres. File E703
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 16 1957

DATE	INITIALS	CODE
1-16	CW	220
		225

224 New Customhouse
Denver 2, Colorado

January 14, 1957

Memorandum

To: Chairman Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Shamrock Group), Montrose County, Colorado

Enclosed are two photo duplications of a copy of letter dated January 7, 1957 from Mr. W. E. Griffith, President, Neptune Uranium Corporation, which advises Lakeside Monarch Mining Company that Neptune won their case against Radium King Mines, Inc.

Copy of the judgement on this action retained by our office confirms this information.

W. M. Traver

W. M. Traver

Enclosures

NEPTUNE URANIUM CORPORATION

Denver Office
2625 Walnut St.
P. O. Box 927, Denver 1

Mine Address
Uravan, Colo.

FILE COPY
JAN 16 1957
INITIALS COPY

January 7, 1957

Lakeside Monarch Mining Company
Moab, Utah

Attention: Mr. Mohler

Gentlemen:

This is to advise that on the 28th of December, 1956, Judge Charles E. Blaine decided case No. 7440 pending in the District Court in Montrose County, in all respects in favor of the Plaintiff, Neptune Uranium Corporation and against the Radium King Mines, Inc.

Our attorney has advised us that under the Colorado Rules of Civil Procedure there is an automatic 10-day stay of execution and this letter is to advise you as owner of the Piper No. 2 and No. 3 claims in Montrose County, Colorado, that we, as tenants, as soon as said 10-day stay of execution expires, expect, unless restricted by further stay of execution or Court Order, to immediately commence mining the ore body which the Court in the above entitled case has found to be on the Piper No. 2 and No. 3 claims rather than on the Eclipse claim. We will, of course, arrange for the payment of rental out of ore proceeds on any ore mined, as called for by the lease existing between yourselves as landlords and ourselves as tenants.

Yours very truly,

NEPTUNE URANIUM CORPORATION

W. E. Griffith
President

WEG:maw
cc: Mr. L. A. Griffith
Prof. Paul H. Keating
Mr. Karl C. Brauns

7-13-56

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

RECEIVED
JUL 12 1956

224 New Customhouse
Denver 2, Colorado

July 10, 1956

Mr. Paul H. Keating
P. O. Box 163
Golden, Colorado

Re: Docket DMEA 3355 (Uranium), Contract Idm-
E703, Neptune Uranium Corporation (Shamrock
Group), Montrose County, Colorado

Dear Mr. Keating:

Settlement sheets and partial royalty payment for $61.88 on Piper No. 1 production have been received from the Vanadium Corporation of America. Royalty on Lot Nos. 74529, 74538, 74574, 74600, 74621, 74639, 74691, 74943 and 74985 was computed omitting the applicable haulage and development allowances.

Such allowances received by you from the sale of ore are considered to be part of the purchase price to which the Government's royalty applies. You are therefore advised that the correct royalty is $69.79 instead of $61.88.

Your check for $7.91 should be made payable to the Defense Minerals Exploration Administration and sent to the Executive Officer, DMEA Field Team, Region III, Room 224 New Customhouse, Denver 2, Colorado.

Yours very truly,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MEM/vj

cc: Royalty File E703
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

RECEIVED
JUN 25 1956

224 New Customhouse
Denver 2, Colorado

June 22, 1956

Mr. Paul H. Keating
P. O. Box 163
Golden, Colorado

Re: Docket DMEA 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Shamrock group), Montrose County, Colorado

Dear Mr. Keating:

On April 19, 1956 we requested your corporation to keep this agency informed of future developments in the pending lawsuit between Neptune Uranium Corporation and the English Oil Company regarding ownership of portions of the claims subordinated to the Government under Contract Idm-E703.

On April 20, 1956 you informed this office, by telephone, the lawsuit was set for trial April 25, 1956. At our request, you stated you would inform us of the outcome in writing immediately after April 25th. No further word has been received.

We hereby request your corporation to submit the desired information without delay.

Yours very truly,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MHM/vj

cc: Royalty File E703
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

RECEIVED
JUN 14 1956

224 New Customhouse
Denver 2, Colorado

June 12, 1956

Mr. Paul H. Keating
P. O. Box 163
Golden, Colorado

Re: Royalty payments, Docket DMEA 3355, (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Shamrock group), Montrose County, Colorado

Dear Mr. Keating:

We have recently been advised of production from the Shamrock group of claims which is subject to DMEA royalty. The last settlement sheet received by this office is dated January 18, 1956 for Liquidation No. 6481 from Union Carbide Nuclear Company, Uravan, Colorado.

Please send (4) four copies of each settlement sheet and applicable royalty for sales subsequent to January 18, 1956 to the Executive Officer, DMEA Region III, Room 224 New Customhouse, Denver 2, Colorado. Checks should be made payable to the Defense Minerals Exploration Administration.

Yours very truly,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MHM/vj

cc: Royalty File E703
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

RECEIVED
APR 23 1956

224 New Customhouse
Denver 2, Colorado

April 19, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3355 (Uranium) Contract Idm-E703, Neptune Uranium Corporation (Shamrock group) Montrose County, Colorado

Enclosed are two copies of a memorandum prepared by M. H. Salsbury, Bureau of Mines engineer for Region III, relative to a possible conflict of ownership of a portion of the land subordinated to the Government under the subject contract. This information should be of considerable value in conjunction with the processing of Neptune Uranium Corporation's recent request for additional work and funds under Contract Idm-E703.

We will furnish you additional information regarding the pending lawsuit as it becomes available.

W. M. Traver

W. M. Traver

4/26/5

Enclosures

Mr. Knouse:

Mr. Ching reviewed this memo in connection with docket assigned to him (DMEA-4144) and you will note that he says it is not involved.

We have no request from Region III involving the Operator's "recent request for additional work and funds under Contract Idm-E703." Perhaps the Region is considering something, but so far it seems there is nothing to do except file this. If we hear nothing from the F.T. Re this infor within two weeks we should write them concerning these questions

gla

FJK
4-26-56

DMEA
Date Rec'd.

APR 17 1956

RECEIVED
APR 23 1956

BUREAU OF MINES
Denver, Colorado

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
April 16, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: M. H. Salsbury

Subject: DMEA 3355 (Uranium) Contract Idm-E703, Neptune Uranium Corporation, successors to Lowell A. Griffith Associates

We have received information from A. E. Flint, representing the English Oil Company, that his principals control the Eclipse claim which overlaps in part the subject Operator's Piper No. 2 and No. 3 claims (see Figure with final report on subject Docket). Mr. Flint states that there is a suit pending involving ownership of the area in conflict, that his principals claim part of the area which was explored under DMEA 3355. A Certification of Discovery was made on this project.

The geologist who made the field examination this week on Docket DMEA 4144 for Neptune Uranium Corporation, reports that the Eclipse owners have sunk an incline to the ore horizon on the disputed ground, but as yet have not removed any ore.

The report made after the field examination on Docket DMEA 3355 recognized a conflict between the Eclipse claim and the Piper No. 2 and No. 3 claims, and DMEA drill holes were laid out to avoid the area which appeared to be in conflict. However, the Eclipse owners claim that the conflict is of greater extent.

A court decision favoring the owners of the Eclipse might involve ground which was drilled under DMEA 3355. If so, it would appear that the Government might be entitled to reimbursement for its share of the exploration cost in holes drilled on ground to which the Operator did not have rights.

Royalties paid to date on production by the Neptune Uranium Corporation are not believed to have come from the disputed area.

M. H. Salsbury
Mining Engineer

MHS/mw
cc: 9
DMEA 3355
Chron

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

RECEIVED
APR 23 1956

Room 2, Customhouse
Denver 2, Colorado

April 19, 1956

Paul H. Keeting
P. O. Box 163
Golden, Colorado

Re: Docket DMEA-3355 (Uranium) Contract Ida-E703,
Keystone Uranium Corporation (Shamrock group)
Montrose County, Colorado

Dear Mr. Keeting:

This letter constitutes a request for your corporation to keep this agency informed of future developments in the pending lawsuit between Keystone Uranium Corporation and the English Oil Company regarding ownership of portions of the claims subordinated to the Government under Contract Ida-E703.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MMB/pw

cc: Royalty File E703
Corres. E703
Sec.Op.Comm. (2)
J. F. Shaw (2)
Chron

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

MAR 26 1956

Mr. Donald T. Finch
DMEA Auditor
224 New Customhouse Building
Denver 2, Colorado

Re: Report of Royalty Review
IAm-2703, DMEA-3355
Neptune Uranium Corporation

Dear Mr. Finch:

Receipt is acknowledged of your Report of Royalty Review covering the above-cited project.

The report is acceptable and normal distribution may be effected.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

WBorovies/wb
March 26, 1956

Copy to: Docket
Admr. Reading File
Mr. Chambers

R.C.B.

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

RECEIVED
JUL 27 1955

224 New Customhouse
Denver, Colorado

July 25, 1955

Memorandum

To: John F. Shaw

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (formerly Lowell A. Griffith Associates) Shamrock Group, Montrose County, Colorado

Enclosed is a complete copy of drill logs for additional drilling performed on the subject property subsequent to the termination of the contract.

It is suggested that a resume of the contained information be included with the Semi-Annual report for the period January 1, 1955 to June 30, 1955.

W. M. Traver

Enclosure

RDB:dja

cc: Sec. Op. Comm. (2)
Corresp. File E703
Chron

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

RECEIVED
JUL 22 1955

224 New Customhouse
Denver 2, Colorado

July 20, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - DMEA Docket 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Formerly Lowell A. Griffith Associates) - Colorado

Enclosed is Government check No. 19,226,150 in the amount of $683.93. This amount is being transferred from the Suspense Account to Royalty Repayments in accordance with our memorandum to you dated July 8, 1955.

W. M. TRAVER

W. M. Traver

Enclosure

vj

cc: Royalty File E703
J. F. Shaw
Sec. Opr. Comm. (2)
Royalty Report File
Chron.

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

RECEIVED
JUL 1 8 1955

224 New Customhouse
Denver 2, Colorado

July 15, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - DMEA Docket 3355, (Uranium) Contract Idm-E703, Neptune Uranium Corporation (Formerly Lowell A. Griffith Associates) - Colorado

Enclosed is Construction Specialties Co. check No. 933 in the amount of $21.24 in payment of royalty due on ore shipped under Liquidation #6079 and balance of payment due on Liquidation #6062.

Settlement sheets were forwarded your office on July 8, 1955.

W. M. TRAVER

W. M. Traver

Enclosure

vj

cc: Royalty File E703
J. F.Shaw
Sec. Opr. Comm. (2)
Royalty Report File
Caron.

Ellis Chambers

Rewritten by Ellis Chambers

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

JUN 30 1955

Mr. Paul H. Keating
Apt. 5, Mines Park
Golden, Colorado

Re: Docket No. DMEA-3355 (uranium)
Contract No. Idm-K703
Lowell A. Griffith Associates
(Neptune Uranium Corporation)
Shamrock Group of claims
Montrose County, Colorado

Dear Mr. Keating:

This will acknowledge receipt of a photostat of your letter of May 20, 1955, addressed to Mr. Wm. H. Traver, Executive Officer of the DMEA Field Team at Denver, Colorado.

It was noted that Lowell A. Griffith Associates, a partnership, has been succeeded by Neptune Uranium Corporation, without any changes in the personnel or management, and that the corporation has assumed all of the assets and liabilities of the Operator-partnership.

We shall be pleased to receive royalty from the corporation, but we wish to point out that we shall continue to look to the Operator-partnership for payment should any royalty due the Government not be paid by the corporation.

Sincerely yours,

C. O. Mittendorf

Administrator

EWEllis:HCRubin:gjb
6/27/55 - 6/28/55
Copy to: DMEA Docket
Adm. R. File
Operating Committee
T. H. Kiilsgaard, GS
J. E. Crawford, BM
E. W. Ellis
Field Team, Region III (2)
J. L. Hofflund
H. C. Rubin
Chron. File
Pending File

R.C.G.

Surname copy

Ellis chron

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

Mr. Paul H. Keating
Apt. 5, Mines Park
Golden, Colorado

Re: Docket No. DMEA-3355 (Uranium)
Contract No. Idm-E703
Lowell A. Griffith Associates
(Neptune Uranium Corporation)
Shamrock Group of claims
Montrose County, Colorado

Dear Mr. Keating:

This will acknowledge receipt of a photostat of your letter of May 20, 1955, addressed to Mr. Wm. H. Traver, Executive Officer of the DMEA Field Team at Denver, Colorado.

It is noted that you have changed the name of the operating company from Lowell A. Griffith Associates to the Neptune Uranium Corporation without any changes in the personnel or management. It is further noted that the latter company has assumed all of the assets and liabilities of the Operator-partnership.

While we will interpose no objection to the change in name, we must remind you that such acceptance of the change in no way relieves the Operator-partnership from its liability in regard to the payment of royalties due the Government resulting from shipments of ore from the contract claims, because the contract is still with the partnership.

Sincerely yours,

Administrator

EWEllis/gla
6-27-55
cc to: Admr.'s Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Legal Division, Rm. 7351
Contract Division, Rm. 4448
DMEA Field Team, Region III (2)

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

RECEIVED
JUN 27 1955

224 New Customhouse
Denver 2,Colorado

June 24, 1955

Mr. Paul H. Keating
Neptune Uranium Corporation
P. O.Box 163
Golden, Colorado

Re: Royalty payments, DMEA Docket 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Formerly Lowell A. Griffith Associates) Shamrock group of claims, Montrose County, Colorado

Dear Mr. Keating:

Enclosed is a copy of our May 24, 1955 letter. Please advise when we may expect the settlement sheets requested in this letter. Settlement sheets will be returned to you as soon as we have copies duplicated for our use.

Yours very truly,

W. M. TRAVER,

J. W. Townsend
for W. M. Traver

Enclosure

RDB/vj

cc: Royalty File E703
J. W. Shaw
Sec. Opr. Comm.(2)
Berkenkotter
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

JUN 22 1955

Memorandum

To: The Administrator, Defense Minerals
Attention: E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3355 (Uranium), Contract No. Idm-K703, Lowell A. Griffith Associates, partnership, Shamrock group of claims, Montrose County, Colorado

Your memorandum dated June 1 requested that we review a letter dated May 20 from the Operator to the Executive Officer, and a memorandum dated May 26 from the latter to the Operating Committee, transmitting copies of the Operator's letter, and inform you whether any formal action is required.

The Operator's letter informed the Government that the assets and liabilities of the Operator-partnership have been taken over by Neptune Uranium Corp., and that the Shamrock group of claims is being operated by the same personnel as operated the partnership. The contract work has been completed, the project has been certified, and the Operator has been paying royalty.

The contract permits the Operator-partnership to transfer the land subject to the Government's royalty; and the Operator remains liable under the contract for the royalty as a surety. It appears that the transfer of the land has been made subject to the Government's royalty.

In these circumstances, records concerning the contract need not be changed. If royalty is not paid by the corporation, demand for royalty should be made upon the partnership-operator as surety.

In specific response to the question in Mr. Ellis' memorandum, it is suggested that a letter be written to the Operator-partnership acknowledging receipt of the information given to us, and reminding it that it remains liable for royalty.

HCRubin:gjb 6/22/55
Copy to: DMEA Docket
Sol. Docket
E. W. Ellis (2)
J. L. Hofflund
H. C. Rubin
Chron. File

/S/ H. C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor,
Defense Minerals

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

RECEIVED
JUN - 3 1955

224 New Customhouse
Denver 2, Colorado

May 31, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - DMEA Docket 3355, Contract Idm-E703, Neptune Uranium Corporation (Formerly Lowell A. Griffith Associates) Colorado - SUSPENSE ACCOUNT

Enclosed is Construction Specialties Co. check No. 347 in the amount of $683.93 in payment of royalty. Applicable settlement sheets have not been received and have been requested from the operator.

It is suggested that this check be deposited in the Suspense Account pending receipt of settlement sheets from the operator.

W. M. TRAVER

W. M. Traver

Enclosure

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 27 1955

224 New Customhouse
Denver 2, Colorado

May 24, 1955

Mr. Paul H. Keating
Neptune Uranium Corporation
P. O. Box 163, Golden, Colorado

Re: Royalty payments, DMEA Docket 3355 (Uranium), Contract Idm-E703, Neptune Uranium Corporation (Formerly Lowell A. Griffith Associates) Shamrock group of claims, Montrose County, Colorado

Dear Mr. Keating:

We hereby acknowledge receipt of your letter dated May 20, 1955 enclosing a breakdown of ore shipments under the subject DMEA contract and check in the amount of $683.93 for the payment of royalties thereon.

For our records we require four copies of each individual settlement sheet. If this number of copies is not readily available, please send us your settlement sheet and we will have the required number of copies photostated for our use after which the originals will be returned to you. We have no use for settlement sheets pertaining to shipments made prior to the date of Contract Idm-E703 which was September 9, 1954.

Our records indicate that royalties due on Lots Nos. 6095 and 6114 in the amounts of $63.69 and $71.01 were paid to this agency directly by the mill as is indicated in the royalty breakdown furnished by you, but that royalties due on the A.E.C. Production Bonus for these shipments has not been paid. If this agrees with your records please send us a check in payment of this royalty in order that our records may be current.

Yours very truly,

W. M. Traver

W. M. Traver

Surname copy

Ellis

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

June 1, 1955

Memorandum

To: Acting Assistant Solicitor, DMEA

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-3355 (Uranium)
Contract No. Idm-E703
Lowell A. Griffith Associates, partnership
Shamrock group of claims
Montrose County, Colorado

Reference is made to memorandum dated May 26, 1955, from the Executive Officer, Region III, to the Secretary of the Operating Committee, with attached copy of letter from Paul H. Keating of the captioned partnership. These communications request that the name of the Operator be changed on our records to the Neptune Uranium Corp., for reasons explained in Mr. Keating's letter.

This project was certified on May 19, 1955.

Kindly advise me whether or not any formal action is required in this matter.

Ernest Wm. Ellis

EWEllis/gla
cc to: Docket
Code 700 contract file

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

224 New Customhouse
Denver 2, Colorado

May 26, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team,,Region III

Subject: DMEA Docket 3355 (Uranium) Contract Idm-E703, Neptune Uranium Corporation (Formerly Lowell A. Griffith Associates) Shamrock group of claims, Montrose County, Colorado

For your information we are enclosing two photostats of a formal statement from Paul H. Keating concerning the newly formed organization which has assumed control of the properties which were subordinated to the Government under DMEA Contract Idm-E703. Please change your records to show this new company name. ✓?

W. M. Traver

W. M. Traver

Enclosures

PAUL H. KEATING
MINING ENGINEER

DMEA
Date Rec'd.
MAY 23 1955
BUREAU OF MINES
Denver, Colorado

Golden, Colo., May 20, 1955.

Defense Minerals Exploration Administration,
224 New Customs House, Denver 2, Colo.
Att: Mr. Wm. H. Traver.
Refer to your Docket No. 3355; --- Idm-E703
"L. A. Griffith Associates".

Gentlemen:

Enclosed is a check for $683.93, (No. 347, dated 5/17/55, Invoice No. M-99x), on the American National Bank, Denver, on the bank account of Construction Specialties Co., 2625 Walnut St. (This "Construction Specialties Co." has been the fiscal agent for Lowell A. Griffith Associates, under the above Docket and Contract No., and is a 50% partner on this contract).

The purpose of this check is to bring royalty payments more nearly up to date, on production-receipts for ore produced on the above docket-contract. The breakdown of the enclosed total is listed on the stub attached to the check.

ALSO ENCLOSED are six copies of the mill returns from the production of the area concerned on the above contract, upon which the amount of the enclosed check has been based.

+++++

For your further information:

The "Lowell A. Griffith Associates", sometimes known as the "Griffith Uranium Co.", was a rather loosely-knit partnership. It has recently been incorporated as the "Neptune Uranium Corp.", (a Colorado Corporation), without changes of personnel or management. The discovery-areas, made possible by your DMEA loan, are now being developed on a closer drilling program, with privately-invested capitol. The DMEA and other agencies will receive reports of findings, as they occur.

The newly formed Neptune Uranium Corp. has formally assumed all of the assets and liabilities of the "Lowell A. Griffith Associates" and/or "Griffith Uranium Co." partnership. Any further correspondence may be continued with the same personnel as heretofore.

Very truly yours,

Lowell A. Griffith Associates
By Paul H. Keating
Paul H. Keating
(Attorney-in-fact).

Surname copy

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

MAY 19 1955

Lowell A. Griffith Associates,
a partnership consisting of
Lowell A. Griffith, P. O. Box 673, Central City, Colorado;
Construction Specialties Co., 2625 Walnut Street, Denver 1, Colo.;
and Paul H. Keating, Apt. 5, Mines Park, Golden, Colorado

Re: Docket No. DMEA-3355 (Uranium)
Contract No. Idm-E703
Lowell A. Griffith Associates
Shamrock Group of claims,
Montrose County, Colorado

Dear Sirs:

Enclosed is a "Certification by the United States of America of a Discovery or Development Under an Exploration Project Contract." This certification covers all the land described in the above-cited contract.

By the terms of the Exploration Project Contract, as amended, and of the certification, all uranium and other valuable minerals produced from the claims described in Article 2 of the contract, from September 9, 1954, the date of the contract, are subject to the Government's percentage royalty as set forth in the contract until the sum of $12,228.75 is paid, or until September 9, 1964, whichever occurs first.

Payments should be made to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Customhouse Building, Denver 2, Colorado. Checks should be payable to the Defense Minerals Exploration Administration. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward the check directly to the Executive Officer. Any bonus payments or allowances received by you from the sale of ore are considered to be a part of the purchase price to which the Government's royalty applies. Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Traver of any changes in ownership or production rights that might have any effect on the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period, please notify Mr. Traver at six-month intervals that no production has been made, when that is the case.

Sincerely yours,

C. O. Mittendorf

Administrator

Copies:
Construction Specialties Co.
Paul H. Keating
Keith M. Andrews
Donald K. Andrews
w/cc of certification

AGKeating/gla
cc to: Admr.'s Reading File
Operating Committee
Mr. Hedges, Rm. 1604
Mr. Kilsgaard, Rm. 5224
Mr. F. E. Johnson

Docket
DMEA Field Team, Region III (2)
Code 700
Mr. Keating

700

Surname copy

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

A G Keating
Ellis
Chamberlin
Selfridge
Hedges
Kiilsgaard
F E Johnson

MAY 19 1955

Mr. Clarence A. Fredell
Acting Director
Materials Division
Emergency Procurement Service
General Services Administration
7th and D Streets, S. W.
Washington 25, D. C.

Re: Docket No. DMEA-3355 (Uranium)
Contract No. Idm-E703
Lowell A. Griffith Associates
Shamrock Group of claims
Montrose County, Colorado

Dear Mr. Fredell:

I am enclosing one copy of a certification of discovery or development relating to the subject exploration contract.

The contract, dated September 9, 1954, authorized a total estimated cost of $18,350.00, with Government participation at 75 percent equaling $13,762.50. The contract provided for wagon drilling 171 holes totaling a maximum of 13,500 feet at a cost of $1.30 per foot, and chemical analyses for U_3O_8 and V_2O_5 not to exceed a cost of $800.00.

Completed work under the contract resulted in rotary drilling 163 holes totaling 12,350 feet which, together with analyses of 50 samples, amounted to a total accepted cost of $16,305.00, with Government participation to the extent of 75 percent, or $12,228.75.

The DMEA is of the opinion that the project work was of definite benefit to the property and, therefore, we have certified that a discovery or development resulted from the work.

Sincerely yours,

C. O. Mittendorf

Administrator

AGKeating/gla 5-6-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. Hedges, Rm. 4604
Kiilsgaard, Rm. 5224
F. E. Johnson
Enclosure
Code 700
Mr. Keating
DMEA Field Team, Region III (2)

R.C.S.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 16 1955

May 12, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Field Team, Region III

Subject: Gamma-ray (Barnaby) log interpretations

Enclosed for your information are four copies of gamma-ray log interpretations as follows:

1) L. A. Griffith Associates, DMEA Docket ~~3355,~~ 3351 Contract Idm-E703 (completed project) - logs of holes 1 to 184, inclusive.

2) Mid-Continent Uranium Company, DMEA Docket 3360, Contract Idm-E723 (terminated project) - logs of holes 55 to 61, inclusive.

3) Camoose Uranium Mines of America, DMEA Docket 3094, Contract Idm-E649 (active project) - logs of holes MC 55 to MC 61, inclusive.

4) Amuranium Corporation, DMEA Docket 3475, Contract Idm-E760 (active project) - log of hole 418.

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

Carpenter Ridge
L.A. Griffith -- DMEA 3355

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
1	60.0		6.2-58.3	Barren						
2	68.0		6.7-68.8	Barren						
3	78.0		5.0-60.9	Barren						
4	60.0		5.2-53.3	Barren						
5	70.0		5.8-61.6	Barren						
6	65.0		5.0-64.4	Barren						
7	65.0		5.1-60.7	24.9 - 25.7	0.8	200			<0.005	
8	80.0		4.8-79.9	46.0 - 49.3 78.3 - 79.9	3.3 1.6	300 260			<0.010 <0.005	
9	80.0		3.7-73.1	Barren						
10	85.0		5.1-85.0	81.2 - 82.1	0.9	300			<0.010	
11	78.0		4.1-67.7	Barren						
12	98.0		4.6-98.0	77.5 - 78.7	1.2	220			<0.005	
13	95.0		5.2-92.8	Barren						
14	90.0		5.3-71.7	Barren						
15			Not logged							
16			Not logged							
17			Not logged							
18			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION Carpenter Ridge

L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
19	100.0		4.1-97.8	Barren						
20	100.0		4.6-90.4	Barren						
21	105.0		6.0-103.5	15.5 - 18.2	2.7	220			<0.005	
22	108.0		4.7-98.6	14.8 - 16.4	1.6	240			<0.005	
23	100.0		4.7-96.3	Barren						
24	100.0		6.0-95.8	8.0 - 9.1 14.2 - 15.8	1.1 1.6	220 200			<0.005 <0.005	
25	94.0		5.1-49.6	Barren						
26	95.0		4.6-88.8	6.3 - 7.0	0.7	220			<0.010	
27	120.0		5.3-119.2	Barren						
28			Not logged							
29	120.0		6.6-118.7	21.6 - 23.7 31.4 - 32.3	2.1 0.9	200 200			<0.005 <0.005	
30	120.0		5.5-117.6	Barren						
31	120.0		6.6-118.8	Barren						
32	118.0		5.9-118.0	36.9 - 38.0	1.1	200			<0.005	
33	107.0		5.3-105.4	Barren						
34	100.0		3.8-99.1	30.6 - 32.4	1.8	200			<0.005	
35			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
36			Not logged							
37	60.0		3.7-57.6	37.3 - 38.4	1.1	500			0.013	
				39.2 - 40.3	1.1	260			<0.005	
				42.7 - 44.6	1.9	230			<0.005	
				44.6 - 47.0	2.4	260			<0.005	
				50.5 - 52.0	1.5	200			<0.005	
38	57.9		4.1-57.9	32.5 - 33.7	1.2	300			<0.010	
				34.2 - 37.1	3.9	360			<0.010	
				37.1 - 38.3	1.2	620			0.016	
				38.3 - 41.5	3.2	380			<0.010	
				41.5 - 43.9	2.4	240			<0.005	
				51.3 - 53.0	1.7	270			<0.005	
39	65.0		5.1-62.9	36.3 - 37.1	0.8	1400			0.038	
				45.1 - 48.8	3.7	380			<0.010	
				54.6 - 55.8	1.4	230			<0.005	
				60.3 - 61.2	0.9	240			<0.005	
40	50.0		3.9-47.7	9.9 - 11.0	1.1	350			<0.010	
				26.0 - 27.6	1.6	260			<0.005	
				32.3 - 33.4	1.1	300			<0.010	
				37.1 - 38.2	1.1	2100			0.058	
				38.2 - 42.7	4.5	600			0.014	
41	58.0		4.8-50.7	46.4 - 47.5	1.1	200			<0.005	
42			Not logged							
43			Not logged							
44			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
45	120.0		4.2-118.3	31.3 - 32.3	1.0	200			<0.005	
				116.6 - 117.5	0.9	320			<0.005	
46	117.0		6.2-116.4	38.0 - 39.1	1.1	200			<0.005	
				115.2 - 115.9	0.7	200			<0.005	
47	65.0		5.4-63.3	62.4 - 63.3	>0.9	>230			<0.005	
48	75.0		3.9-63.8	5.6 - 7.4	1.8	210			<0.005	
49			Not logged							
50			Not logged							
51	120.0		5.4-119.1	Barren						
52	120.0		6.1-119.6	Barren						
53			Not logged							
54			Not logged							
55			Not logged							
56	60.0		5.0-54.7	Barren						
57	60.0		4.0-58.3	Barren						
58	60.0		5.7-55.5	Barren						
59	75.0		3.8-67.6	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
60	97.0		5.6-75.5	25.6 - 27.1	1.5	200			<0.005	
				69.5 - 71.4	1.9	220			<0.005	
				72.0 - 73.0	1.0	210			<0.005	
				74.1 - 75.5	>1.4	>260			<0.010	
61	60.0		3.8-55.8	53.3 - 54.0	0.7	750			0.017	
				54.0 - 54.7		5000			0.26	
62	60.0		4.1-52.0	Barren						
63	50.0		4.7-48.9	11.9 - 13.2	1.3	200			<0.005	
				31.1 - 32.2	1.1	210			<0.005	
				33.2 - 34.7	1.5	220			<0.005	
				37.2 - 38.6	1.4	220			<0.005	
64	55.0		5.0-44.1	15.8 - 16.9		200			<0.005	
				43.4 - 44.1	0.7	>3800			<0.17	
65			Not logged							
66	54.0		4.0-45.8	45.4 - 45.8		>300			<0.010	
67	55.0		4.4-54.1	41.8 - 43.3	1.5	260			<0.005	
				45.7 - 48.1	2.4	280			<0.005	
				50.7 - 53.3	2.6	240			<0.005	
68	48.0		4.0-47.9	8.3 - 9.4	1.1	220			<0.005	
				27.5 - 29.5	2.0	260			<0.005	
				32.6 - 33.6	1.0	220			<0.005	
				36.0 - 37.1	1.1	260			<0.005	
				39.3 - 40.5	1.2	210			<0.005	
				41.5 - 42.9	1.4	200			<0.005	
69	60.0		5.9-48.1	35.4 - 36.4	1.0	460			0.014	
				42.0 - 43.1	1.1	210			<0.005	
70	60.0		4.6-58.4	49.6 - 51.6	2.0	230			<0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
71	60.0		3.8-51.6	30.1 - 31.5		460			<0.010	
				34.2 - 35.1		860			0.03	
72	60.0		4.6-54.4	19.0 - 20.3	1.3	250			<0.005	
				43.4 - 44.7	1.4	230			<0.005	
				49.0 - 51.4	2.4	210			<0.005	
73	60.0		4.7-59.5	52.2 - 54.3	2.1	200			<0.005	
74	135.0		3.7-131.6	30.9 - 32.0	1.1	200			<0.005	
				46.1 - 47.1	1.0	200			<0.005	
75	110.0		5.4-101.2	Barren						
76	115.0		5.0-114.9	19.2 - 20.1	0.9	220			<0.005	
77	65.0		5.4-63.2	Barren						
78	80.0		4.4-72.2	69.5 - 70.5	1.0	400			<0.010	
79	105.0		4.3-104.1	22.5 - 25.0	2.5	240			<0.005	
				25.0 - 26.4	1.4	290			<0.005	
				85.0 - 86.7	1.7	210			<0.005	
				87.8 - 89.1	1.3	210			<0.005	
80	80.0		3.8-77.7	9.2 - 10.4	1.2	260			<0.010	
				70.5 - 73.6	3.1	210			<0.005	
81	74.0		4.4-72.9	52.3 - 54.6		680			0.014	
				56.2 - 58.2		520			0.011	
				67.4 - 68.3		230			<0.005	
				68.6 - 69.6		200			<0.005	
82	76.0		4.6-74.8	51.3 - 52.0	0.7	3500			0.16	
				52.0 - 58.5	6.5	440			< 0.010	
				69.3 - 70.9	1.6	200			< 0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
83	76.0		3.7-75.5	4.2 - 4.8	0.6	220			<0.005	
				4.8 - 5.9	1.5	200			<0.005	
				7.3 - 8.3	1.0	200			<0.005	
84	78.0		4.2-76.7	43.4 - 44.2		800			0.030	
85	65.0		4.0-60.1	Barren						
86	70.0		3.9-68.0	Barren						
87	65.0		4.2-62.1	Barren						
88	80.0		3.7-79.6	20.6 - 21.5	0.9	210			<0.005	
89	80.0		3.2-79.0	Barren						
90	90.0		4.2-82.0	Barren						
91	80.0		3.2-79.1	18.5 - 19.6	1.1	210			<0.005	
92	70.0		4.9-68.6	Barren						
93	70.0		4.6-64.5	62.0 - 63.2	1.2	220			<0.005	
94	65.0		3.7-63.5	38.2 - 42.2	4.0	280			<0.005	
				42.2 - 44.0	1.8	1550			0.032	
95	75.0		4.6-72.5	Barren						
96	80.0		3.6-77.3	Barren						
97	90.0		3.0-86.8	Barren						
98	90.0		4.4-90.5	Barren						
99	90.0		4.1-90.0	Barren						

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA 3355

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
100	90.0		4.0-90.0	Barren						
101	90.0		4.0-86.0	Barren						
102	90.0		5.4-89.6	Barren						
103	90.0		6.0-88.1	Barren						
104	95.0		3.2-91.9	70.0-70.7 88.7-89.5 90.5-91.9		5400 360 220			0.29 ∠0.010 ∠0.010	
105	90.0		6.1-86.3	85.1-86.1	1.0	250			∠0.010	
106	90.0		4.7-84.5	Barren						
107	90.0		5.2-87.8	Barren						
108	85.0		5.2-83.0	Barren						
109	90.0		4.1-90.2	Barren						
110	85.0		4.6-82.8	Barren						
111	90.0		4.7-84.8	Barren						
112	80.0		5.6-81.9	Barren						
113	80.0		5.1-77.4	Barren						
114	80.0		5.0-79.1	Barren						
115	75.0		3.5-74.0	Barren						
116	65.0		5.0-65.1	43.3-44.5	1.2	210			∠0.005	

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
117	60.0		3.9- 57.6	Barren						
118	60.0		3.8- 58.3	4.5 - 5.5		360			∠0.01	
				5.5 -11.2	5.7	200			∠0.005	
				12.0 -13.5	1.5	200			∠0.005	
				20.5 -21.6	1.1	240			∠0.005	
				23.0 -24.4	1.4	240			∠0.005	
				26.8 -29.0	2.2	220			∠0.005	
				41.6 -44.7	3.1	240			∠0.005	
				47.5 -49.0	1.5	250			∠0.005	
				51.1 -52.9	1.8	220			∠0.005	
119	70.0		4.6- 68.4	4.6 -53.6		salted				
				53.6 -54.2		26,500			1.3	
120	70.0		6.0- 67.8	6.0 - 7.5		220			∠0.005	
				27.1 -28.5		240			∠0.005	
				42.8 -43.7		210			∠0.005	
				49.8 -52.3		260			∠0.005	
				53.3 -54.3		230			∠0.005	
				63.6 -65.5		400			∠0.01	
				65.5 -67.6		280			∠0.005	
				66.9 -67.8+		∠920			≥0.022	
121	70.0		3.7- 68.1	24.8 -25.9		210			∠0.005	
122	70.0		7.5- 69.4	Barren						
123	72.0		4.3- 72.0	Barren						
124	80.0		5.1- 77.3	Barren						

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
125	100.0		5.0-98.8	27.0 - 28.0	1.0	250			∠0.010	
				43.6 - 44.6	1.0	210			∠0.005	
126	100.0		3.6-99.4	13.6 - 16.6	3.0	320			∠0.010	
				16.6 - 18.7	2.1	590			0.012	
				23.3 - 24.6	1.3	200			∠0.005	
127	110.0		3.7-107.5	14.1 - 16.5	2.4	350			∠0.010	
				16.5 - 17.9	1.4	550			0.012	
128	95.0		4.0- 94.2	5.8 - 6.9	1.1	200			∠0.005	
129	90.0		3.7- 90.0	Barren						
130	90.0		3.2- 86.4	85.0 - 86.4		220			∠0.005	
131	75.0		4.8- 72.7	Barren						
132	75.0		3.7- 74.2	Barren						
133	85.0		2.8- 83.2	69.2 - 70.6		230			∠0.005	
				72.6 - 73.6		300			∠0.010	
				79.4 - 80.9		240			∠0.010	
				82.1 - 83.2		∠230			∠0.005	
134	70.0		5.0- 70.6	47.4 - 53.7		210			∠0.005	
135	70.0		4.7- 70.5	Barren						
136	90.0		4.8- 87.0	4.8 - 5.2		200			∠0.010	
				18.0 - 19.2		210			∠0.005	
				69.3 - 72.8		350			∠0.010	
137	75.0		4.6- 72.0	61.6 - 62.9		210			∠0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
138			Not logged							
139	120.0		3.9-119.6	8.4 - 9.7	1.3	240			∠0.005	
				10.9 - 16.8	5.9	300			0.005	
				117.0 -118.5	1.5	200			∠0.005	
140	110.0		5.2-107.1	13.8 - 16.0	2.2	260			∠0.005	
				19.0 - 20.5	1.5	320			∠0.010	
				46.8 - 47.7	0.9	200			∠0.005	
141	110.0		3.5-107.5	16.8 - 18.3	1.5	390			∠0.010	
				18.3 - 20.1	1.8	260			∠0.005	
				43.0 - 44.2	1.2	200			∠0.005	
				50.5 - 51.5	1.0	220			∠0.005	
142	120.0		4.5-120.4	Barren						
143	90.0		4.1- 88.2	84.0 - 85.3	1.3	300			∠0.010	
				85.3 - 86.6	1.3	200			∠0.005	
144	80.0		3.9- 77.0	75.4 - 77.0	∠1.6	∠200			∠0.005	
145	75.0		4.8- 72.3	Barren						
146	60.0		4.3- 58.0	Barren						
147	60.0		3.7- 59.3	Barren						
148	60.0		3.3- 57.1	Barren						
149	15.0		3.1- 14.9	Barren						
150	55.0		3.7- 51.6	Barren						

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
151	60.0		3.7-57.6	52.7 - 54.9		240			∠0.005	
152	55.0		5.0-48.7	Barren						
153	60.0		3.8-60.8	54.2 - 54.8		13500			0.68	
				56.4 - 58.7		280			∠0.005	
154	60.0		3.1-57.5	35.3 - 37.4	2.1	1500			0.030	
				37.4 - 38.1	0.7	600			0.018	
				38.1 - 38.7	0.6	1100			0.036	
				39.4 - 40.3	0.9	3800			0.15	
				40.3 - 40.9	0.6	600			0.014	
				40.9 - 42.1	1.2	2200			0.060	
				42.1 - 52.8		salted				
				52.8 - 54.9		500			∠0.010	
155	70.0		4.2-68.0	34.4 - 35.3	0.9	240			∠0.005	
				36.7 - 38.3	1.6	200			∠0.005	
				41.2 - 42.0	0.8	320			∠0.010	
				42.8 - 43.8	1.0	460			0.011	
				44.4 - 45.4	1.0	300			∠0.010	
				46.1 - 48.7	1.6	260			∠0.005	
				51.2 - 52.7	1.5	620			0.015	
				58.2 - 59.4	1.2	340			∠0.010	
				62.4 - 63.6	1.2	200			∠0.005	
156	90.0		3.2-85.7	3.2 - 56.6		salted				
				56.6 - 57.5	0.9	23000			0.78	
				66.3 - 68.9	2.6	640			0.013	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
157	60.0		4.3-56.8	26.5 - 32.0		salted				
				32.0 - 32.8	0.8	3600			0.14	
				32.8 - 36.5	3.7	500			0.010	
				37.6 - 38.8	1.2	360			<0.010	
				49.8 - 52.8	3.0	200			<0.005	
				56.2 - 56.8	≥0.6	≤260			≤0.005	
158	?		?	7.7 - 8.9	1.2	200			<0.005	
				25.9 - 27.5	1.6	250			<0.005	
				28.6 - 30.0	1.4	280			<0.010	
				34.0 - 35.2	1.2	530			<0.013	
				36.8 - 38.5	1.7	300			<0.010	
				48.7 - 49.5	0.8	260			<0.010	
				52.0 - 53.5	1.5	200			<0.005	
159	54.0		4.8-49.1	19.4 - 20.0	0.6	8400			0.62	
				41.1 - 42.1		500			0.013	
160	60.0		4.5-57.6	Barren						
161	58.0		3.1-57.2	47.1 - 48.1	1.0	200			<0.005	
				49.3 - 50.2	0.9	240			<0.005	
				52.0 - 54.7	2.7	200			<0.005	
162	50.0		5.0-44.7	11.6 - 12.6	1.0	220			<0.005	
				32.8 - 34.5	1.7	320			<0.010	
				36.2 - 37.3	1.1	540			<0.014	
				39.6 - 40.7	1.1	420			0.010	
163			Not logged							
164	46.0		3.2-45.3	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
165	52.0		3.9-49.6	33.0 - 34.2		200			<0.005	
166	52.0		3.8-49.6	Barren						
167	52.0		4.5-50.6	47.9 - 49.2	2.3	340			<0.010	
				50.0 - 50.6		≥240			≥0.005	
168	45.0		4.3-42.7	14.3 - 29.2		salted				
				29.2 - 30.1		32,000			1.1	
				30.1 - 42.7		salted				
169	49.0		4.9-45.4	18.1 - 21.0	2.9	280			<0.010	
				21.0 - 24.1	3.1	440			<0.010	
				24.1 - 30.0	5.9	300			<0.010	
				36.6 - 37.3	0.7	300			<0.010	
170	42.0		3.6-39.4	30.1 - 31.6	1.5	280			<0.010	
171	40.0		3.3-35.2	19.0 - 20.8	1.8	1600			0.035	
172	40.0		3.5-37.3	33.1 - 34.5	1.4	220			<0.005	
173	42.0		4.0-40.2	27.7 - 28.7		540			0.014	
				31.9 - 34.4		200			<0.005	
174	48.0		3.4-45.7	26.7 - 28.0	1.3	440			<0.010	
				41.2 - 42.0	0.8	220			<0.005	
				43.7 - 45.2	1.5	200			<0.005	
175	59.0		3.6-51.9	21.8 - 24.0	2.2	240			<0.005	
				25.8 - 27.8	2.0	240			<0.005	
				29.4 - 32.7	3.3	240			<0.005	
				44.4 - 46.9	2.5	240			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
176	45.0		4.3-42.5	20.7 - 22.1	1.4	2400			0.061	
				22.1 - 25.1	3.0	1300			0.026	
				25.1 - 26.8	1.7	750			0.017	
				32.6 - 34.4	1.8	460			<0.010	
177	40.0		3.9-37.5	17.2 - 18.2	1.0	240			<0.005	
				19.2 - 21.3	2.1	230			<0.005	
				29.0 - 29.9	0.9	220			<0.005	
				33.1 - 35.1	2.0	240			<0.005	
178	40.0		4.8-34.9	17.3 - 18.2	0.9	21500			0.74	
				22.7 - 23.7	1.0	560			0.014	
179			Not drilled							
180	47.0		5.1-44.7	28.7 - 29.8	1.1	200			<0.005	
				36.2 - 37.3	1.1	280			<0.005	
181	47.0		3.7-45.4	16.0 - 17.0	1.0	380			<0.010	
				17.8 - 18.9	1.1	540			<0.014	
				19.5 - 20.8	1.3	300			<0.010	
				24.5 - 25.7	1.2	220			<0.005	
				43.7 - 45.1	1.4	380			<0.010	
182	58.0		5.1-56.7	32.8 - 34.1	1.3	320			<0.010	
183	60.0		4.6-58.4	38.6 - 40.4	1.8	200			<0.005	
				56.5 - 57.8	1.3	200			<0.005	
184	75.0		5.1-73.3	60.0 - 61.2	1.2	280			<0.010	
				69.1 - 73.3	3.2	230			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA 3355

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
1	60.0		6.2-58.3	Barren						
2	68.0		6.7-68.8	Barren						
3	78.0		5.0-60.9	Barren						
4	60.0		5.2-53.3	Barren						
5	70.0		5.8-61.6	Barren						
6	65.0		5.0-64.4	Barren						
7	65.0		5.1-60.7	24.9 - 25.7	0.8	200			<0.005	
8	80.0		4.8-79.9	46.0 - 49.3 78.3 - 79.9	3.3 1.6	300 260			<0.010 <0.005	
9	80.0		3.7-73.1	Barren						
10	85.0		5.1-85.0	81.2 - 82.1	0.9	300			<0.010	
11	78.0		4.1-67.7	Barren						
12	98.0		4.6-98.0	77.5 - 78.7	1.2	220			<0.005	
13	95.0		5.2-92.8	Barren						
14	90.0		5.3-71.7	Barren						
15			Not logged							
16			Not logged							
17			Not logged							
18			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
19	100.0		4.1-97.8	Barren						
20	100.0		4.6-90.4	Barren						
21	105.0		6.0-103.5	15.5 - 18.2	2.7	220			<0.005	
22	108.0		4.7-98.6	14.8 - 16.4	1.6	240			<0.005	
23	100.0		4.7-96.3	Barren						
24	100.0		6.0-95.8	8.0 - 9.1 14.2 - 15.8	1.1 1.6	220 200			<0.005 <0.005	
25	94.0		5.1-49.6	Barren						
26	95.0		4.6-88.8	6.3 - 7.0	0.7	220			<0.010	
27	120.0		5.3-119.2	Barren						
28			Not logged							
29	120.0		6.6-118.7	21.6 - 23.7 31.4 - 32.3	2.1 0.9	200 200			<0.005 <0.005	
30	120.0		5.5-117.6	Barren						
31	120.0		6.6-118.8	Barren						
32	118.0		5.9-118.0	36.9 - 38.0	1.1	200			<0.005	
33	107.0		5.3-105.4	Barren						
34	100.0		3.8-99.1	30.6 - 32.4	1.8	200			<0.005	
35			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
36			Not logged							
37	60.0		3.7-57.6	37.3 - 38.4	1.1	500			0.013	
				39.2 - 40.3	1.1	260			<0.005	
				42.7 - 44.6	1.9	230			<0.005	
				44.6 - 47.0	2.4	260			<0.005	
				50.5 - 52.0	1.5	200			<0.005	
38	57.9		4.1-57.9	32.5 - 33.7	1.2	300			<0.010	
				34.2 - 37.1	3.9	360			<0.010	
				37.1 - 38.3	1.2	620			0.016	
				38.3 - 41.5	3.2	380			<0.010	
				41.5 - 43.9	2.4	240			<0.005	
				51.3 - 53.0	1.7	270			<0.005	
39	65.0		5.1-62.9	36.3 - 37.1	0.8	1400			0.038	
				45.1 - 48.8	3.7	380			<0.010	
				54.6 - 55.8	1.4	230			<0.005	
				60.3 - 61.2	0.9	240			<0.005	
40	50.0		3.9-47.7	9.9 - 11.0	1.1	350			<0.010	
				26.0 - 27.6	1.6	260			<0.005	
				32.3 - 33.4	1.1	300			<0.010	
				37.1 - 38.2	1.1	2100			0.058	
				38.2 - 42.7	4.5	600			0.014	
41	58.0		4.8-50.7	46.4 - 47.5	1.1	200			<0.005	
42			Not logged							
43			Not logged							
44			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
45	120.0		4.2-118.3	31.3 - 32.3	1.0	200			<0.005	
				116.6 - 117.5	0.9	320			<0.005	
46	117.0		6.2-116.4	38.0 - 39.1	1.1	200			<0.005	
				115.2 - 115.9	0.7	200			<0.005	
47	65.0		5.4-63.3	62.4 - 63.3	>0.9	>230			<0.005	
48	75.0		3.9-63.8	5.6 - 7.4	1.8	210			<0.005	
49			Not logged							
50			Not logged							
51	120.0		5.4-119.1	Barren						
52	120.0		6.1-119.6	Barren						
53			Not logged							
54			Not logged							
55			Not logged							
56	60.0		5.0-54.7	Barren						
57	60.0		4.0-58.3	Barren						
58	60.0		5.7-55.5	Barren						
59	75.0		3.8-67.6	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
60	97.0		5.6-75.5	25.6 - 27.1	1.5	200			<0.005	
				69.5 - 71.4	1.9	220			<0.005	
				72.0 - 73.0	1.0	210			<0.005	
				74.1 - 75.5	>1.4	>260			<0.010	
61	60.0		3.8-55.8	53.3 - 54.0	0.7	750			0.017	
				54.0 - 54.7		5000			0.26	
62	60.0		4.1-52.0	Barren						
63	50.0		4.7-48.9	11.9 - 13.2	1.3	200			<0.005	
				31.1 - 32.2	1.1	210			<0.005	
				33.2 - 34.7	1.5	220			<0.005	
				37.2 - 38.6	1.4	220			<0.005	
64	55.0		5.0-44.1	15.8 - 16.9		200			<0.005	
				43.4 - 44.1	0.7	>3800			<0.17	
65			Not logged							
66	54.0		4.0-45.8	45.4 - 45.8		>300			<0.010	
67	55.0		4.4-54.1	41.8 - 43.3	1.5	260			<0.005	
				45.7 - 48.1	2.4	280			<0.005	
				50.7 - 53.3	2.6	240			<0.005	
68	48.0		4.0-47.9	8.3 - 9.4	1.1	220			<0.005	
				27.5 - 29.5	2.0	260			<0.005	
				32.6 - 33.6	1.0	220			<0.005	
				36.0 - 37.1	1.1	260			<0.005	
				39.3 - 40.5	1.2	210			<0.005	
				41.5 - 42.9	1.4	200			<0.005	
69	60.0		5.9-48.1	35.4 - 36.4	1.0	460			0.014	
				42.0 - 43.1	1.1	210			<0.005	
70	60.0		4.6-58.4	49.6 - 51.6	2.0	230			<0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
71	60.0		3.8-51.6	30.1 - 31.5		460			<0.010	
				34.2 - 35.1		860			0.03	
72	60.0		4.6-54.4	19.0 - 20.3	1.3	250			<0.005	
				43.4 - 44.7	1.4	230			<0.005	
				49.0 - 51.4	2.4	210			<0.005	
73	60.0		4.7-59.5	52.2 - 54.3	2.1	200			<0.005	
74	135.0		3.7-131.6	30.9 - 32.0	1.1	200			<0.005	
				46.1 - 47.1	1.0	200			<0.005	
75	110.0		5.4-101.2	Barren						
76	115.0		5.0-114.9	19.2 - 20.1	0.9	220			<0.005	
77	65.0		5.4-63.2	Barren						
78	80.0		4.4-72.2	69.5 - 70.5	1.0	400			<0.010	
79	105.0		4.3-104.1	22.5 - 25.0	2.5	240			<0.005	
				25.0 - 26.4	1.4	290			<0.005	
				85.0 - 86.7	1.7	210			<0.005	
				87.8 - 89.1	1.3	210			<0.005	
80	80.0		3.8-77.7	9.2 - 10.4	1.2	260			<0.010	
				70.5 - 73.6	3.1	210			<0.005	
81	74.0		4.4-72.9	52.3 - 54.6		680			0.014	
				56.2 - 58.2		520			0.011	
				67.4 - 68.3		230			<0.005	
				68.6 - 69.6		200			<0.005	
82	76.0		4.6-74.8	51.3 - 52.0	0.7	3500			0.16	
				52.0 - 58.5	6.5	440			< 0.010	
				69.3 - 70.9	1.6	200			< 0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
83	76.0		3.7-75.5	4.2 - 4.8	0.6	220			<0.005	
				4.8 - 5.9	1.5	200			<0.005	
				7.3 - 8.3	1.0	200			<0.005	
84	78.0		4.2-76.7	43.4 - 44.2		800			0.030	
85	65.0		4.0-60.1	Barren						
86	70.0		3.9-68.0	Barren						
87	65.0		4.2-62.1	Barren						
88	80.0		3.7-79.6	20.6 - 21.5	0.9	210			<0.005	
89	80.0		3.2-79.0	Barren						
90	90.0		4.2-82.0	Barren						
91	80.0		3.2-79.1	18.5 - 19.6	1.1	210			<0.005	
92	70.0		4.9-68.6	Barren						
93	70.0		4.6-64.5	62.0 - 63.2	1.2	220			<0.005	
94	65.0		3.7-63.5	38.2 - 42.2	4.0	280			<0.005	
				42.2 - 44.0	1.8	1550			0.032	
95	75.0		4.6-72.5	Barren						
96	80.0		3.6-77.3	Barren						
97	90.0		3.0-86.8	Barren						
98	90.0		4.4-90.5	Barren						
99	90.0		4.1-90.0	Barren						

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA 3355

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
100	90.0		4.0-90.0	Barren						
101	90.0		4.0-86.0	Barren						
102	90.0		5.4-89.6	Barren						
103	90.0		6.0-88.1	Barren						
104	95.0		3.2-91.9	70.0-70.7 88.7-89.5 90.5-91.9		5400 360 220			0.29 ∠0.010 ∠0.010	
105	90.0		6.1-86.3	85.1-86.1	1.0	250			∠0.010	
106	90.0		4.7-84.5	Barren						
107	90.0		5.2-87.8	Barren						
108	85.0		5.2-83.0	Barren						
109	90.0		4.1-90.2	Barren						
110	85.0		4.6-82.8	Barren						
111	90.0		4.7-84.8	Barren						
112	80.0		5.6-81.9	Barren						
113	80.0		5.1-77.4	Barren						
114	80.0		5.0-79.1	Barren						
115	75.0		3.5-74.0	Barren						
116	65.0		5.0-65.1	43.3-44.5	1.2	210			∠0.005	

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
117	60.0		3.9- 57.6	Barren						
118	60.0		3.8- 58.3	4.5 - 5.5		360			∠0.01	
				5.5 -11.2	5.7	200			∠0.005	
				12.0 -13.5	1.5	200			∠0.005	
				20.5 -21.6	1.1	240			∠0.005	
				23.0 -24.4	1.4	240			∠0.005	
				26.8 -29.0	2.2	220			∠0.005	
				41.6 -44.7	3.1	240			∠0.005	
				47.5 -49.0	1.5	250			∠0.005	
				51.1 -52.9	1.8	220			∠0.005	
119	70.0		4.6- 68.4	4.6 -53.6		salted				
				53.6 -54.2		26,500			1.3	
120	70.0		6.0- 67.8	6.0 - 7.5		220			∠0.005	
				27.1 -28.5		240			∠0.005	
				42.8 -43.7		210			∠0.005	
				49.8 -52.3		260			∠0.005	
				53.3 -54.3		230			∠0.005	
				63.6 -65.5		400			∠0.01	
				65.5 -67.6		280			∠0.005	
				66.9 -67.8+		∠920			≥0.022	
121	70.0		3.7- 68.1	24.8 -25.9		210			∠0.005	
122	70.0		7.5- 69.4	Barren						
123	72.0		4.3- 72.0	Barren						
124	80.0		5.1- 77.3	Barren						

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
125	100.0		5.0-98.8	27.0 - 28.0	1.0	250			<0.010	
				43.6 - 44.6	1.0	210			<0.005	
126	100.0		3.6-99.4	13.6 - 16.6	3.0	320			<0.010	
				16.6 - 18.7	2.1	590			0.012	
				23.3 - 24.6	1.3	200			<0.005	
127	110.0		3.7-107.5	14.1 - 16.5	2.4	350			<0.010	
				16.5 - 17.9	1.4	550			0.012	
128	95.0		4.0- 94.2	5.8 - 6.9	1.1	200			<0.005	
129	90.0		3.7- 90.0	Barren						
130	90.0		3.2- 86.4	85.0 - 86.4		220			<0.005	
131	75.0		4.8- 72.7	Barren						
132	75.0		3.7- 74.2	Barren						
133	85.0		2.8- 83.2	69.2 - 70.6		230			<0.005	
				72.6 - 73.6		300			<0.010	
				79.4 - 80.9		240			<0.010	
				82.1 - 83.2		<230			<0.005	
134	70.0		5.0- 70.6	47.4 - 53.7		210			<0.005	
135	70.0		4.7- 70.5	Barren						
136	90.0		4.8- 87.0	4.8 - 5.2		200			<0.010	
				18.0 - 19.2		210			<0.005	
				69.3 - 72.8		350			<0.010	
137	75.0		4.6- 72.0	61.6 - 62.9		210			<0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
138			Not logged							
139	120.0		3.9-119.6	8.4 - 9.7	1.3	240			<0.005	
				10.9 - 16.8	5.9	300			0.005	
				117.0 -118.5	1.5	200			<0.005	
140	110.0		5.2-107.1	13.8 - 16.0	2.2	260			<0.005	
				19.0 - 20.5	1.5	320			<0.010	
				46.8 - 47.7	0.9	200			<0.005	
141	110.0		3.5-107.5	16.8 - 18.3	1.5	390			<0.010	
				18.3 - 20.1	1.8	260			<0.005	
				43.0 - 44.2	1.2	200			<0.005	
				50.5 - 51.5	1.0	220			<0.005	
142	120.0		4.5-120.4	Barren						
143	90.0		4.1- 88.2	84.0 - 85.3	1.3	300			<0.010	
				85.3 - 86.6	1.3	200			<0.005	
144	80.0		3.9- 77.0	75.4 - 77.0	<1.6	<200			<0.005	
145	75.0		4.8- 72.3	Barren						
146	60.0		4.3- 58.0	Barren						
147	60.0		3.7- 59.3	Barren						
148	60.0		3.3- 57.1	Barren						
149	15.0		3.1- 14.9	Barren						
150	55.0		3.7- 51.6	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
151	60.0		3.7-57.6	52.7 - 54.9		240			∠0.005	
152	55.0		5.0-48.7	Barren						
153	60.0		3.8-60.8	54.2 - 54.8		13500			0.68	
				56.4 - 58.7		280			∠0.005	
154	60.0		3.1-57.5	35.3 - 37.4	2.1	1500			0.030	
				37.4 - 38.1	0.7	600			0.018	
				38.1 - 38.7	0.6	1100			0.036	
				39.4 - 40.3	0.9	3800			0.15	
				40.3 - 40.9	0.6	600			0.014	
				40.9 - 42.1	1.2	2200			0.060	
				42.1 - 52.8		salted				
				52.8 - 54.9		500			∠0.010	
155	70.0		4.2-68.0	34.4 - 35.3	0.9	240			∠0.005	
				36.7 - 38.3	1.6	200			∠0.005	
				41.2 - 42.0	0.8	320			∠0.010	
				42.8 - 43.8	1.0	460			0.011	
				44.4 - 45.4	1.0	300			∠0.010	
				46.1 - 48.7	1.6	260			∠0.005	
				51.2 - 52.7	1.5	620			0.015	
				58.2 - 59.4	1.2	340			∠0.010	
				62.4 - 63.6	1.2	200			∠0.005	
156	90.0		3.2-85.7	3.2 - 56.6		salted				
				56.6 - 57.5	0.9	23000			0.78	
				66.3 - 68.9	2.6	640			0.013	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
157	60.0		4.3-56.8	26.5 - 32.0		salted				
				32.0 - 32.8	0.8	3600			0.14	
				32.8 - 36.5	3.7	500			0.010	
				37.6 - 38.8	1.2	360			∠0.010	
				49.8 - 52.8	3.0	200			∠0.005	
				56.2 - 56.8	≥0.6	≥260			≥0.005	
158	?		?	7.7 - 8.9	1.2	200			∠0.005	
				25.9 - 27.5	1.6	250			∠0.005	
				28.6 - 30.0	1.4	280			∠0.010	
				34.0 - 35.2	1.2	530			∠0.013	
				36.8 - 38.5	1.7	300			∠0.010	
				48.7 - 49.5	0.8	260			∠0.010	
				52.0 - 53.5	1.5	200			∠0.005	
159	54.0		4.8-49.1	19.4 - 20.0	0.6	8400			0.62	
				41.1 - 42.1		500			0.013	
160	60.0		4.5-57.6	Barren						
161	58.0		3.1-57.2	47.1 - 48.1	1.0	200			∠0.005	
				49.3 - 50.2	0.9	240			∠0.005	
				52.0 - 54.7	2.7	200			∠0.005	
162	50.0		5.0-44.7	11.6 - 12.6	1.0	220			∠0.005	
				32.8 - 34.5	1.7	320			∠0.010	
				36.2 - 37.3	1.1	540			∠0.014	
				39.6 - 40.7	1.1	420			0.010	
163			Not logged							
164	46.0		3.2-45.3	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
165	52.0		3.9-49.6	33.0 - 34.2		200			<0.005	
166	52.0		3.8-49.6	Barren						
167	52.0		4.5-50.6	47.9 - 49.2	2.3	340			<0.010	
				50.0 - 50.6		≥240			≥0.005	
168	45.0		4.3-42.7	14.3 - 29.2		salted				
				29.2 - 30.1		32,000			1.1	
				30.1 - 42.7		salted				
169	49.0		4.9-45.4	18.1 - 21.0	2.9	280			<0.010	
				21.0 - 24.1	3.1	440			<0.010	
				24.1 - 30.0	5.9	300			<0.010	
				36.6 - 37.3	0.7	300			<0.010	
170	42.0		3.6-39.4	30.1 - 31.6	1.5	280			<0.010	
171	40.0		3.3-35.2	19.0 - 20.8	1.8	1600			0.035	
172	40.0		3.5-37.3	33.1 - 34.5	1.4	220			<0.005	
173	42.0		4.0-40.2	27.7 - 28.7		540			0.014	
				31.9 - 34.4		200			<0.005	
174	48.0		3.4-45.7	26.7 - 28.0	1.3	440			<0.010	
				41.2 - 42.0	0.8	220			<0.005	
				43.7 - 45.2	1.5	200			<0.005	
175	59.0		3.6-51.9	21.8 - 24.0	2.2	240			<0.005	
				25.8 - 27.8	2.0	240			<0.005	
				29.4 - 32.7	3.3	240			<0.005	
				44.4 - 46.9	2.5	240			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
176	45.0		4.3-42.5	20.7 - 22.1	1.4	2400			0.061	
				22.1 - 25.1	3.0	1300			0.026	
				25.1 - 26.8	1.7	750			0.017	
				32.6 - 34.4	1.8	460			<0.010	
177	40.0		3.9-37.5	17.2 - 18.2	1.0	240			<0.005	
				19.2 - 21.3	2.1	230			<0.005	
				29.0 - 29.9	0.9	220			<0.005	
				33.1 - 35.1	2.0	240			<0.005	
178	40.0		4.8-34.9	17.3 - 18.2	0.9	21500			0.74	
				22.7 - 23.7	1.0	560			0.014	
179			Not drilled							
180	47.0		5.1-44.7	28.7 - 29.8	1.1	200			<0.005	
				36.2 - 37.3	1.1	280			<0.005	
181	47.0		3.7-45.4	16.0 - 17.0	1.0	380			<0.010	
				17.8 - 18.9	1.1	540			<0.014	
				19.5 - 20.8	1.3	300			<0.010	
				24.5 - 25.7	1.2	220			<0.005	
				43.7 - 45.1	1.4	380			<0.010	
182	58.0		5.1-56.7	32.8 - 34.1	1.3	320			<0.010	
183	60.0		4.6-58.4	38.6 - 40.4	1.8	200			<0.005	
				56.5 - 57.8	1.3	200			<0.005	
184	75.0		5.1-73.3	60.0 - 61.2	1.2	280			<0.010	
				69.1 - 73.3	3.2	230			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA 3355

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
1	60.0		6.2-58.3	Barren						
2	68.0		6.7-68.8	Barren						
3	78.0		5.0-60.9	Barren						
4	60.0		5.2-53.3	Barren						
5	70.0		5.8-61.6	Barren						
6	65.0		5.0-64.4	Barren						
7	65.0		5.1-60.7	24.9 - 25.7	0.8	200			<0.005	
8	80.0		4.8-79.9	46.0 - 49.3 78.3 - 79.9	3.3 1.6	300 260			< 0.010 <0.005	
9	80.0		3.7-73.1	Barren						
10	85.0		5.1-85.0	81.2 - 82.1	0.9	300			< 0.010	
11	78.0		4.1-67.7	Barren						
12	98.0		4.6-98.0	77.5 - 78.7	1.2	220			<0.005	
13	95.0		5.2-92.8	Barren						
14	90.0		5.3-71.7	Barren						
15			Not logged							
16			Not logged							
17			Not logged							
18			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
19	100.0		4.1-97.8	Barren						
20	100.0		4.6-90.4	Barren						
21	105.0		6.0-103.5	15.5 - 18.2	2.7	220			<0.005	
22	108.0		4.7-98.6	14.8 - 16.4	1.6	240			<0.005	
23	100.0		4.7-96.3	Barren						
24	100.0		6.0-95.8	8.0 - 9.1 14.2 - 15.8	1.1 1.6	220 200			<0.005 <0.005	
25	94.0		5.1-49.6	Barren						
26	95.0		4.6-88.8	6.3 - 7.0	0.7	220			<0.010	
27	120.0		5.3-119.2	Barren						
28			Not logged							
29	120.0		6.6-118.7	21.6 - 23.7 31.4 - 32.3	2.1 0.9	200 200			<0.005 <0.005	
30	120.0		5.5-117.6	Barren						
31	120.0		6.6-118.8	Barren						
32	118.0		5.9-118.0	36.9 - 38.0	1.1	200			<0.005	
33	107.0		5.3-105.4	Barren						
34	100.0		3.8-99.1	30.6 - 32.4	1.8	200			<0.005	
35			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
36			Not logged							
37	60.0		3.7-57.6	37.3 - 38.4	1.1	500			0.013	
				39.2 - 40.3	1.1	260			<0.005	
				42.7 - 44.6	1.9	230			<0.005	
				44.6 - 47.0	2.4	260			<0.005	
				50.5 - 52.0	1.5	200			<0.005	
38	57.9		4.1-57.9	32.5 - 33.7	1.2	300			<0.010	
				34.2 - 37.1	3.9	360			<0.010	
				37.1 - 38.3	1.2	620			0.016	
				38.3 - 41.5	3.2	380			<0.010	
				41.5 - 43.9	2.4	240			<0.005	
				51.3 - 53.0	1.7	270			<0.005	
39	65.0		5.1-62.9	36.3 - 37.1	0.8	1400			0.038	
				45.1 - 48.8	3.7	380			<0.010	
				54.6 - 55.8	1.4	230			<0.005	
				60.3 - 61.2	0.9	240			<0.005	
40	50.0		3.9-47.7	9.9 - 11.0	1.1	350			<0.010	
				26.0 - 27.6	1.6	260			<0.005	
				32.3 - 33.4	1.1	300			<0.010	
				37.1 - 38.2	1.1	2100			0.058	
				38.2 - 42.7	4.5	600			0.014	
41	58.0		4.8-50.7	46.4 - 47.5	1.1	200			<0.005	
42			Not logged							
43			Not logged							
44			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
45	120.0		4.2-118.3	31.3 - 32.3 116.6 - 117.5	1.0 0.9	200 320			<0.005 <0.005	
46	117.0		6.2-116.4	38.0 - 39.1 115.2 - 115.9	1.1 0.7	200 200			<0.005 <0.005	
47	65.0		5.4-63.3	62.4 - 63.3	>0.9	>230			<0.005	
48	75.0		3.9-63.8	5.6 - 7.4	1.8	210			<0.005	
49			Not logged							
50			Not logged							
51	120.0		5.4-119.1	Barren						
52	120.0		6.1-119.6	Barren						
53			Not logged							
54			Not logged							
55			Not logged							
56	60.0		5.0-54.7	Barren						
57	60.0		4.0-58.3	Barren						
58	60.0		5.7-55.5	Barren						
59	75.0		3.8-67.6	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
60	97.0		5.6-75.5	25.6 - 27.1	1.5	200			<0.005	
				69.5 - 71.4	1.9	220			<0.005	
				72.0 - 73.0	1.0	210			<0.005	
				74.1 - 75.5	>1.4	>260			<0.010	
61	60.0		3.8-55.8	53.3 - 54.0	0.7	750			0.017	
				54.0 - 54.7		5000			0.26	
62	60.0		4.1-52.0	Barren						
63	50.0		4.7-48.9	11.9 - 13.2	1.3	200			<0.005	
				31.1 - 32.2	1.1	210			<0.005	
				33.2 - 34.7	1.5	220			<0.005	
				37.2 - 38.6	1.4	220			<0.005	
64	55.0		5.0-44.1	15.8 - 16.9		200			<0.005	
				43.4 - 44.1	0.7	>3800			<0.17	
65			Not logged							
66	54.0		4.0-45.8	45.4 - 45.8		>300			<0.010	
67	55.0		4.4-54.1	41.8 - 43.3	1.5	260			<0.005	
				45.7 - 48.1	2.4	280			<0.005	
				50.7 - 53.3	2.6	240			<0.005	
68	48.0		4.0-47.9	8.3 - 9.4	1.1	220			<0.005	
				27.5 - 29.5	2.0	260			<0.005	
				32.6 - 33.6	1.0	220			<0.005	
				36.0 - 37.1	1.1	260			<0.005	
				39.3 - 40.5	1.2	210			<0.005	
				41.5 - 42.9	1.4	200			<0.005	
69	60.0		5.9-48.1	35.4 - 36.4	1.0	460			0.014	
				42.0 - 43.1	1.1	210			<0.005	
70	60.0		4.6-58.4	49.6 - 51.6	2.0	230			<0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
71	60.0		3.8-51.6	30.1 - 31.5		460			<0.010	
				34.2 - 35.1		860			0.03	
72	60.0		4.6-54.4	19.0 - 20.3	1.3	250			<0.005	
				43.4 - 44.7	1.4	230			<0.005	
				49.0 - 51.4	2.4	210			<0.005	
73	60.0		4.7-59.5	52.2 - 54.3	2.1	200			<0.005	
74	135.0		3.7-131.6	30.9 - 32.0	1.1	200			<0.005	
				46.1 - 47.1	1.0	200			<0.005	
75	110.0		5.4-101.2	Barren						
76	115.0		5.0-114.9	19.2 - 20.1	0.9	220			<0.005	
77	65.0		5.4-63.2	Barren						
78	80.0		4.4-72.2	69.5 - 70.5	1.0	400			<0.010	
79	105.0		4.3-104.1	22.5 - 25.0	2.5	240			<0.005	
				25.0 - 26.4	1.4	290			<0.005	
				85.0 - 86.7	1.7	210			<0.005	
				87.8 - 89.1	1.3	210			<0.005	
80	80.0		3.8-77.7	9.2 - 10.4	1.2	260			<0.010	
				70.5 - 73.6	3.1	210			<0.005	
81	74.0		4.4-72.9	52.3 - 54.6		680			0.014	
				56.2 - 58.2		520			0.011	
				67.4 - 68.3		230			<0.005	
				68.6 - 69.6		200			<0.005	
82	76.0		4.6-74.8	51.3 - 52.0	0.7	3500			0.16	
				52.0 - 58.5	6.5	440			< 0.010	
				69.3 - 70.9	1.6	200			< 0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
83	76.0		3.7-75.5	4.2 - 4.8	0.6	220			<0.005	
				4.8 - 5.9	1.5	200			<0.005	
				7.3 - 8.3	1.0	200			<0.005	
84	78.0		4.2-76.7	43.4 - 44.2		800			0.030	
85	65.0		4.0-60.1	Barren						
86	70.0		3.9-68.0	Barren						
87	65.0		4.2-62.1	Barren						
88	80.0		3.7-79.6	20.6 - 21.5	0.9	210			<0.005	
89	80.0		3.2-79.0	Barren						
90	90.0		4.2-82.0	Barren						
91	80.0		3.2-79.1	18.5 - 19.6	1.1	210			<0.005	
92	70.0		4.9-68.6	Barren						
93	70.0		4.6-64.5	62.0 - 63.2	1.2	220			<0.005	
94	65.0		3.7-63.5	38.2 - 42.2	4.0	280			<0.005	
				42.2 - 44.0	1.8	1550			0.032	
95	75.0		4.6-72.5	Barren						
96	80.0		3.6-77.3	Barren						
97	90.0		3.0-86.8	Barren						
98	90.0		4.4-90.5	Barren						
99	90.0		4.1-90.0	Barren						

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA 3355

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
100	90.0		4.0-90.0	Barren						
101	90.0		4.0-86.0	Barren						
102	90.0		5.4-89.6	Barren						
103	90.0		6.0-88.1	Barren						
104	95.0		3.2-91.9	70.0-70.7		5400			0.29	
				88.7-89.5		360			<0.010	
				90.5-91.9		220			<0.010	
105	90.0		6.1-86.3	85.1-86.1	1.0	250			<0.010	
106	90.0		4.7-84.5	Barren						
107	90.0		5.2-87.8	Barren						
108	85.0		5.2-83.0	Barren						
109	90.0		4.1-90.2	Barren						
110	85.0		4.6-82.8	Barren						
111	90.0		4.7-84.8	Barren						
112	80.0		5.6-81.9	Barren						
113	80.0		5.1-77.4	Barren						
114	80.0		5.0-79.1	Barren						
115	75.0		3.5-74.0	Barren						
116	65.0		5.0-65.1	43.3-44.5	1.2	210			<0.005	

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
117	60.0		3.9- 57.6	Barren						
118	60.0		3.8- 58.3	4.5 - 5.5		360			∠0.01	
				5.5 -11.2	5.7	200			∠0.005	
				12.0 -13.5	1.5	200			∠0.005	
				20.5 -21.6	1.1	240			∠0.005	
				23.0 -24.4	1.4	240			∠0.005	
				26.8 -29.0	2.2	220			∠0.005	
				41.6 -44.7	3.1	240			∠0.005	
				47.5 -49.0	1.5	250			∠0.005	
				51.1 -52.9	1.8	220			∠0.005	
119	70.0		4.6- 68.4	4.6 -53.6		salted				
				53.6 -54.2		26,500			1.3	
120	70.0		6.0- 67.8	6.0 - 7.5		220			∠0.005	
				27.1 -28.5		240			∠0.005	
				42.8 -43.7		210			∠0.005	
				49.8 -52.3		260			∠0.005	
				53.3 -54.3		230			∠0.005	
				63.6 -65.5		400			∠0.01	
				65.5 -67.6		280			∠0.005	
				66.9 -67.8+		∠920			≥0.022	
121	70.0		3.7- 68.1	24.8 -25.9		210			∠0.005	
122	70.0		7.5- 69.4	Barren						
123	72.0		4.3- 72.0	Barren						
124	80.0		5.1- 77.3	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
125	100.0		5.0-98.8	27.0 - 28.0	1.0	250			<0.010	
				43.6 - 44.6	1.0	210			<0.005	
126	100.0		3.6-99.4	13.6 - 16.6	3.0	320			<0.010	
				16.6 - 18.7	2.1	590			0.012	
				23.3 - 24.6	1.3	200			<0.005	
127	110.0		3.7-107.5	14.1 - 16.5	2.4	350			<0.010	
				16.5 - 17.9	1.4	550			0.012	
128	95.0		4.0- 94.2	5.8 - 6.9	1.1	200			<0.005	
129	90.0		3.7- 90.0	Barren						
130	90.0		3.2- 86.4	85.0 - 86.4		220			<0.005	
131	75.0		4.8- 72.7	Barren						
132	75.0		3.7- 74.2	Barren						
133	85.0		2.8- 83.2	69.2 - 70.6		230			<0.005	
				72.6 - 73.6		300			<0.010	
				79.4 - 80.9		240			<0.010	
				82.1 - 83.2		<230			<0.005	
134	70.0		5.0- 70.6	47.4 - 53.7		210			<0.005	
135	70.0		4.7- 70.5	Barren						
136	90.0		4.8- 87.0	4.8 - 5.2		200			<0.010	
				18.0 - 19.2		210			<0.005	
				69.3 - 72.8		350			<0.010	
137	75.0		4.6- 72.0	61.6 - 62.9		210			<0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
138			Not logged							
139	120.0		3.9-119.6	8.4 - 9.7	1.3	240			<0.005	
				10.9 - 16.8	5.9	300			0.005	
				117.0 -118.5	1.5	200			<0.005	
140	110.0		5.2-107.1	13.8 - 16.0	2.2	260			<0.005	
				19.0 - 20.5	1.5	320			<0.010	
				46.8 - 47.7	0.9	200			<0.005	
141	110.0		3.5-107.5	16.8 - 18.3	1.5	390			<0.010	
				18.3 - 20.1	1.8	260			<0.005	
				43.0 - 44.2	1.2	200			<0.005	
				50.5 - 51.5	1.0	220			<0.005	
142	120.0		4.5-120.4	Barren						
143	90.0		4.1- 88.2	84.0 - 85.3	1.3	300			<0.010	
				85.3 - 86.6	1.3	200			<0.005	
144	80.0		3.9- 77.0	75.4 - 77.0	<1.6	<200			<0.005	
145	75.0		4.8- 72.3	Barren						
146	60.0		4.3- 58.0	Barren						
147	60.0		3.7- 59.3	Barren						
148	60.0		3.3- 57.1	Barren						
149	15.0		3.1- 14.9	Barren						
150	55.0		3.7- 51.6	Barren						

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
151	60.0		3.7-57.6	52.7 - 54.9		240			∠0.005	
152	55.0		5.0-48.7	Barren						
153	60.0		3.8-60.8	54.2 - 54.8		13500			0.68	
				56.4 - 58.7		280			∠0.005	
154	60.0		3.1-57.5	35.3 - 37.4	2.1	1500			0.030	
				37.4 - 38.1	0.7	600			0.018	
				38.1 - 38.7	0.6	1100			0.036	
				39.4 - 40.3	0.9	3800			0.15	
				40.3 - 40.9	0.6	600			0.014	
				40.9 - 42.1	1.2	2200			0.060	
				42.1 - 52.8		salted				
				52.8 - 54.9		500			∠0.010	
155	70.0		4.2-68.0	34.4 - 35.3	0.9	240			∠0.005	
				36.7 - 38.3	1.6	200			∠0.005	
				41.2 - 42.0	0.8	320			∠0.010	
				42.8 - 43.8	1.0	460			0.011	
				44.4 - 45.4	1.0	300			∠0.010	
				46.1 - 48.7	1.6	260			∠0.005	
				51.2 - 52.7	1.5	620			0.015	
				58.2 - 59.4	1.2	340			∠0.010	
				62.4 - 63.6	1.2	200			∠0.005	
156	90.0		3.2-85.7	3.2 - 56.6		salted				
				56.6 - 57.5	0.9	23000			0.78	
				66.3 - 68.9	2.6	640			0.013	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
157	60.0		4.3-56.8	26.5 - 32.0		salted				
				32.0 - 32.8	0.8	3600			0.14	
				32.8 - 36.5	3.7	500			0.010	
				37.6 - 38.8	1.2	360			<0.010	
				49.8 - 52.8	3.0	200			<0.005	
				56.2 - 56.8	≥0.6	≤260			≤0.005	
158	?		?	7.7 - 8.9	1.2	200			<0.005	
				25.9 - 27.5	1.6	250			<0.005	
				28.6 - 30.0	1.4	280			<0.010	
				34.0 - 35.2	1.2	530			<0.013	
				36.8 - 38.5	1.7	300			<0.010	
				48.7 - 49.5	0.8	260			<0.010	
				52.0 - 53.5	1.5	200			<0.005	
159	54.0		4.8-49.1	19.4 - 20.0	0.6	8400			0.62	
				41.1 - 42.1		500			0.013	
160	60.0		4.5-57.6	Barren						
161	58.0		3.1-57.2	47.1 - 48.1	1.0	200			<0.005	
				49.3 - 50.2	0.9	240			<0.005	
				52.0 - 54.7	2.7	200			<0.005	
162	50.0		5.0-44.7	11.6 - 12.6	1.0	220			<0.005	
				32.8 - 34.5	1.7	320			<0.010	
				36.2 - 37.3	1.1	540			<0.011	
				39.6 - 40.7	1.1	420			0.010	
163			Not logged							
164	46.0		3.2-45.3	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
165	52.0		3.9-49.6	33.0 - 34.2		200			<0.005	
166	52.0		3.8-49.6	Barren						
167	52.0		4.5-50.6	47.9 - 49.2	2.3	340			<0.010	
				50.0 - 50.6		≥240			≥0.005	
168	45.0		4.3-42.7	14.3 - 29.2		salted				
				29.2 - 30.1		32000			1.1	
				30.1 - 42.7		salted				
169	49.0		4.9-45.4	18.1 - 21.0	2.9	280			<0.010	
				21.0 - 24.1	3.1	440			<0.010	
				24.1 - 30.0	5.9	300			<0.010	
				36.6 - 37.3	0.7	300			<0.010	
170	42.0		3.6-39.4	30.1 - 31.6	1.5	280			<0.010	
171	40.0		3.3-35.2	19.0 - 20.8	1.8	1600			0.035	
172	40.0		3.5-37.3	33.1 - 34.5	1.4	220			<0.005	
173	42.0		4.0-40.2	27.7 - 28.7		540			0.014	
				31.9 - 34.4		200			<0.005	
174	48.0		3.4-45.7	26.7 - 28.0	1.3	440			<0.010	
				41.2 - 42.0	0.8	220			<0.005	
				43.7 - 45.2	1.5	200			<0.005	
175	59.0		3.6-51.9	21.8 - 24.0	2.2	240			<0.005	
				25.8 - 27.8	2.0	240			<0.005	
				29.4 - 32.7	3.3	240			<0.005	
				44.4 - 46.9	2.5	240			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
176	45.0		4.3-42.5	20.7 - 22.1	1.4	2400			0.061	
				22.1 - 25.1	3.0	1300			0.026	
				25.1 - 26.8	1.7	750			0.017	
				32.6 - 34.4	1.8	460			<0.010	
177	40.0		3.9-37.5	17.2 - 18.2	1.0	240			<0.005	
				19.2 - 21.3	2.1	230			<0.005	
				29.0 - 29.9	0.9	220			<0.005	
				33.1 - 35.1	2.0	240			<0.005	
178	40.0		4.8-34.9	17.3 - 18.2	0.9	21500			0.74	
				22.7 - 23.7	1.0	560			0.014	
179			Not drilled							
180	47.0		5.1-44.7	28.7 - 29.8	1.1	200			<0.005	
				36.2 - 37.3	1.1	280			<0.005	
181	47.0		3.7-45.4	16.0 - 17.0	1.0	380			<0.010	
				17.8 - 18.9	1.1	540			<0.014	
				19.5 - 20.8	1.3	300			<0.010	
				24.5 - 25.7	1.2	220			<0.005	
				43.7 - 45.1	1.4	380			<0.010	
182	58.0		5.1-56.7	32.8 - 34.1	1.3	320			<0.010	
183	60.0		4.6-58.4	38.6 - 40.4	1.8	200			<0.005	
				56.5 - 57.8	1.3	200			<0.005	
184	75.0		5.1-73.3	60.0 - 61.2	1.2	280			<0.010	
				69.1 - 73.3	3.2	230			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA 3355

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
1	60.0		6.2-58.3	Barren						
2	68.0		6.7-68.8	Barren						
3	78.0		5.0-60.9	Barren						
4	60.0		5.2-53.3	Barren						
5	70.0		5.8-61.6	Barren						
6	65.0		5.0-64.4	Barren						
7	65.0		5.1-60.7	24.9 - 25.7	0.8	200			<0.005	
8	80.0		4.8-79.9	46.0 - 49.3 78.3 - 79.9	3.3 1.6	300 260			<0.010 <0.005	
9	80.0		3.7-73.1	Barren						
10	85.0		5.1-85.0	81.2 - 82.1	0.9	300			<0.010	
11	78.0		4.1-67.7	Barren						
12	98.0		4.6-98.0	77.5 - 78.7	1.2	220			<0.005	
13	95.0		5.2-92.8	Barren						
14	90.0		5.3-71.7	Barren						
15			Not logged							
16			Not logged							
17			Not logged							
18			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION Carpenter Ridge

L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
19	100.0		4.1-97.8	Barren						
20	100.0		4.6-90.4	Barren						
21	105.0		6.0-103.5	15.5 - 18.2	2.7	220			<0.005	
22	108.0		4.7-98.6	14.8 - 16.4	1.6	240			<0.005	
23	100.0		4.7-96.3	Barren						
24	100.0		6.0-95.8	8.0 - 9.1 14.2 - 15.8	1.1 1.6	220 200			<0.005 <0.005	
25	94.0		5.1-49.6	Barren						
26	95.0		4.6-88.8	6.3 - 7.0	0.7	220			<0.010	
27	120.0		5.3-119.2	Barren						
28			Not logged							
29	120.0		6.6-118.7	21.6 - 23.7 31.4 - 32.3	2.1 0.9	200 200			<0.005 <0.005	
30	120.0		5.5-117.6	Barren						
31	120.0		6.6-118.8	Barren						
32	118.0		5.9-118.0	36.9 - 38.0	1.1	200			<0.005	
33	107.0		5.3-105.4	Barren						
34	100.0		3.8-99.1	30.6 - 32.4	1.8	200			<0.005	
35			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
36			Not logged							
37	60.0		3.7-57.6	37.3 - 38.4	1.1	500			0.013	
				39.2 - 40.3	1.1	260			<0.005	
				42.7 - 44.6	1.9	230			<0.005	
				44.6 - 47.0	2.4	260			<0.005	
				50.5 - 52.0	1.5	200			<0.005	
38	57.9		4.1-57.9	32.5 - 33.7	1.2	300			<0.010	
				34.2 - 37.1	3.9	360			<0.010	
				37.1 - 38.3	1.2	620			0.016	
				38.3 - 41.5	3.2	380			<0.010	
				41.5 - 43.9	2.4	240			<0.005	
				51.3 - 53.0	1.7	270			<0.005	
39	65.0		5.1-62.9	36.3 - 37.1	0.8	1400			0.038	
				45.1 - 48.8	3.7	380			<0.010	
				54.6 - 55.8	1.4	230			<0.005	
				60.3 - 61.2	0.9	240			<0.005	
40	50.0		3.9-47.7	9.9 - 11.0	1.1	350			<0.010	
				26.0 - 27.6	1.6	260			<0.005	
				32.3 - 33.4	1.1	300			<0.010	
				37.1 - 38.2	1.1	2100			0.058	
				38.2 - 42.7	4.5	600			0.014	
41	58.0		4.8-50.7	46.4 - 47.5	1.1	200			<0.005	
42			Not logged							
43			Not logged							
44			Not logged							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
45	120.0		4.2-118.3	31.3 - 32.3 116.6 - 117.5	1.0 0.9	200 320			<0.005 <0.005	
46	117.0		6.2-116.4	38.0 - 39.1 115.2 - 115.9	1.1 0.7	200 200			<0.005 <0.005	
47	65.0		5.4-63.3	62.4 - 63.3	>0.9	>230			<0.005	
48	75.0		3.9-63.8	5.6 - 7.4	1.8	210			<0.005	
49			Not logged							
50			Not logged							
51	120.0		5.4-119.1	Barren						
52	120.0		6.1-119.6	Barren						
53			Not logged							
54			Not logged							
55			Not logged							
56	60.0		5.0-54.7	Barren						
57	60.0		4.0-58.3	Barren						
58	60.0		5.7-55.5	Barren						
59	75.0		3.8-67.6	Barren						

*[illegible]om top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
60	97.0		5.6-75.5	25.6 - 27.1	1.5	200			<0.005	
				69.5 - 71.4	1.9	220			<0.005	
				72.0 - 73.0	1.0	210			<0.005	
				74.1 - 75.5	>1.4	>260			<0.010	
61	60.0		3.8-55.8	53.3 - 54.0	0.7	750			0.017	
				54.0 - 54.7		5000			0.26	
62	60.0		4.1-52.0	Barren						
63	50.0		4.7-48.9	11.9 - 13.2	1.3	200			<0.005	
				31.1 - 32.2	1.1	210			<0.005	
				33.2 - 34.7	1.5	220			<0.005	
				37.2 - 38.6	1.4	220			<0.005	
64	55.0		5.0-44.1	15.8 - 16.9		200			<0.005	
				43.4 - 44.1	0.7	>3800			<0.17	
65			Not logged							
66	54.0		4.0-45.8	45.4 - 45.8		>300			<0.010	
67	55.0		4.4-54.1	41.8 - 43.3	1.5	260			<0.005	
				45.7 - 48.1	2.4	280			<0.005	
				50.7 - 53.3	2.6	240			<0.005	
68	48.0		4.0-47.9	8.3 - 9.4	1.1	220			<0.005	
				27.5 - 29.5	2.0	260			<0.005	
				32.6 - 33.6	1.0	220			<0.005	
				36.0 - 37.1	1.1	260			<0.005	
				39.3 - 40.5	1.2	210			<0.005	
				41.5 - 42.9	1.4	200			<0.005	
69	60.0		5.9-48.1	35.4 - 36.4	1.0	460			0.014	
				42.0 - 43.1	1.1	210			<0.005	
70	60.0		4.6-58.4	49.6 - 51.6	2.0	230			<0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
71	60.0		3.8-51.6	30.1 - 31.5		460			<0.010	
				34.2 - 35.1		860			0.03	
72	60.0		4.6-54.4	19.0 - 20.3	1.3	250			<0.005	
				43.4 - 44.7	1.4	230			<0.005	
				49.0 - 51.4	2.4	210			<0.005	
73	60.0		4.7-59.5	52.2 - 54.3	2.1	200			<0.005	
74	135.0		3.7-131.6	30.9 - 32.0	1.1	200			<0.005	
				46.1 - 47.1	1.0	200			<0.005	
75	110.0		5.4-101.2	Barren						
76	115.0		5.0-114.9	19.2 - 20.1	0.9	220			<0.005	
77	65.0		5.4-63.2	Barren						
78	80.0		4.4-72.2	69.5 - 70.5	1.0	400			<0.010	
79	105.0		4.3-104.1	22.5 - 25.0	2.5	240			<0.005	
				25.0 - 26.4	1.4	290			<0.005	
				85.0 - 86.7	1.7	210			<0.005	
				87.8 - 89.1	1.3	210			<0.005	
80	80.0		3.8-77.7	9.2 - 10.4	1.2	260			<0.010	
				70.5 - 73.6	3.1	210			<0.005	
81	74.0		4.4-72.9	52.3 - 54.6		680			0.014	
				56.2 - 58.2		520			0.011	
				67.4 - 68.3		230			<0.005	
				68.6 - 69.6		200			<0.005	
82	76.0		4.6-74.8	51.3 - 52.0	0.7	3500			0.16	
				52.0 - 58.5	6.5	440			< 0.010	
				69.3 - 70.9	1.6	200			< 0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L. A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
83	76.0		3.7-75.5	4.2 - 4.8	0.6	220			<0.005	
				4.8 - 5.9	1.5	200			<0.005	
				7.3 - 8.3	1.0	200			<0.005	
84	78.0		4.2-76.7	43.4 - 44.2		800			0.030	
85	65.0		4.0-60.1	Barren						
86	70.0		3.9-68.0	Barren						
87	65.0		4.2-62.1	Barren						
88	80.0		3.7-79.6	20.6 - 21.5	0.9	210			<0.005	
89	80.0		3.2-79.0	Barren						
90	90.0		4.2-82.0	Barren						
91	80.0		3.2-79.1	18.5 - 19.6	1.1	210			<0.005	
92	70.0		4.9-68.6	Barren						
93	70.0		4.6-64.5	62.0 - 63.2	1.2	220			<0.005	
94	65.0		3.7-63.5	38.2 - 42.2	4.0	280			<0.005	
				42.2 - 44.0	1.8	1550			0.032	
95	75.0		4.6-72.5	Barren						
96	80.0		3.6-77.3	Barren						
97	90.0		3.0-86.8	Barren						
98	90.0		4.4-90.5	Barren						
99	90.0		4.1-90.0	Barren						

* From top to bottom depths

Carpenter Ridge
GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA 3355

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
100	90.0		4.0-90.0	Barren						
101	90.0		4.0-86.0	Barren						
102	90.0		5.4-89.6	Barren						
103	90.0		6.0-88.1	Barren						
104	95.0		3.2-91.9	70.0-70.7		5400			0.29	
				88.7-89.5		360			<0.010	
				90.5-91.9		220			<0.010	
105	90.0		6.1-86.3	85.1-86.1	1.0	250			<0.010	
106	90.0		4.7-84.5	Barren						
107	90.0		5.2-87.8	Barren						
108	85.0		5.2-83.0	Barren						
109	90.0		4.1-90.2	Barren						
110	85.0		4.6-82.8	Barren						
111	90.0		4.7-84.8	Barren						
112	80.0		5.6-81.9	Barren						
113	80.0		5.1-77.4	Barren						
114	80.0		5.0-79.1	Barren						
115	75.0		3.5-74.0	Barren						
116	65.0		5.0-65.1	43.3-44.5	1.2	210			<0.005	

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From*	Depth Logged To	Anomaly Detected From*	Anomaly Detected To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
117	60.0		3.9	57.6	Barren							
118	60.0		3.8	58.3	4.5	5.5		360			<0.01	
					5.5	11.2	5.7	200			<0.005	
					12.0	13.5	1.5	200			<0.005	
					20.5	21.6	1.1	240			<0.005	
					23.0	24.4	1.4	240			<0.005	
					26.8	29.0	2.2	220			<0.005	
					41.6	44.7	3.1	240			<0.005	
					47.5	49.0	1.5	250			<0.005	
					51.1	52.9	1.8	220			<0.005	
119	70.0		4.6	68.4	4.6	53.6		salted				
					53.6	54.2		26,500			1.3	
120	70.0		6.0	67.8	6.0	7.5		220			<0.005	
					27.1	28.5		240			<0.005	
					42.8	43.7		210			<0.005	
					49.8	52.3		260			<0.005	
					53.3	54.3		230			<0.005	
					63.6	65.5		400			<0.01	
					65.5	67.6		280			<0.005	
					66.9	67.8+		<920			≥0.022	
121	70.0		3.7	68.1	24.8	25.9		210			<0.005	
122	70.0		7.5	69.4	Barren							
123	72.0		4.3	72.0	Barren							
124	80.0		5.1	77.3	Barren							

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
125	100.0		5.0-98.8	27.0 - 28.0	1.0	250			∠0.010	
				43.6 - 44.6	1.0	210			∠0.005	
126	100.0		3.6-99.4	13.6 - 16.6	3.0	320			∠0.010	
				16.6 - 18.7	2.1	590			0.012	
				23.3 - 24.6	1.3	200			∠0.005	
127	110.0		3.7-107.5	14.1 - 16.5	2.4	350			∠0.010	
				16.5 - 17.9	1.4	550			0.012	
128	95.0		4.0- 94.2	5.8 - 6.9	1.1	200			∠0.005	
129	90.0		3.7- 90.0	Barren						
130	90.0		3.2- 86.4	85.0 - 86.4		220			∠0.005	
131	75.0		4.8- 72.7	Barren						
132	75.0		3.7- 74.2	Barren						
133	85.0		2.8- 83.2	69.2 - 70.6		230			∠0.005	
				72.6 - 73.6		300			∠0.010	
				79.4 - 80.9		240			∠0.010	
				82.1 - 83.2		∠230			∠0.005	
134	70.0		5.0- 70.6	47.4 - 53.7		210			∠0.005	
135	70.0		4.7- 70.5	Barren						
136	90.0		4.8- 87.0	4.8 - 5.2		200			∠0.010	
				18.0 - 19.2		210			∠0.005	
				69.3 - 72.8		350			∠0.010	
137	75.0		4.6- 72.0	61.6 - 62.9		210			∠0.005	

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
138			Not logged							
139	120.0		3.9-119.6	8.4 - 9.7	1.3	240			∠0.005	
				10.9 - 16.8	5.9	300			0.005	
				117.0 -118.5	1.5	200			∠0.005	
140	110.0		5.2-107.1	13.8 - 16.0	2.2	260			∠0.005	
				19.0 - 20.5	1.5	320			∠0.010	
				46.8 - 47.7	0.9	200			∠0.005	
141	110.0		3.5-107.5	16.8 - 18.3	1.5	390			∠0.010	
				18.3 - 20.1	1.8	260			∠0.005	
				43.0 - 44.2	1.2	200			∠0.005	
				50.5 - 51.5	1.0	220			∠0.005	
142	120.0		4.5-120.4	Barren						
143	90.0		4.1- 88.2	84.0 - 85.3	1.3	300			∠0.010	
				85.3 - 86.6	1.3	200			∠0.005	
144	80.0		3.9- 77.0	75.4 - 77.0	∠1.6	∠200			∠0.005	
145	75.0		4.8- 72.3	Barren						
146	60.0		4.3- 58.0	Barren						
147	60.0		3.7- 59.3	Barren						
148	60.0		3.3- 57.1	Barren						
149	15.0		3.1- 14.9	Barren						
150	55.0		3.7- 51.6	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
151	60.0		3.7-57.6	52.7 - 54.9		240			∠0.005	
152	55.0		5.0-48.7	Barren						
153	60.0		3.8-60.8	54.2 - 54.8		13500			0.68	
				56.4 - 58.7		280			∠0.005	
154	60.0		3.1-57.5	35.3 - 37.4	2.1	1500			0.030	
				37.4 - 38.1	0.7	600			0.018	
				38.1 - 38.7	0.6	1100			0.036	
				39.4 - 40.3	0.9	3800			0.15	
				40.3 - 40.9	0.6	600			0.014	
				40.9 - 42.1	1.2	2200			0.060	
				42.1 - 52.8		salted				
				52.8 - 54.9		500			∠0.010	
155	70.0		4.2-68.0	34.4 - 35.3	0.9	240			∠0.005	
				36.7 - 38.3	1.6	200			∠0.005	
				41.2 - 42.0	0.8	320			∠0.010	
				42.8 - 43.8	1.0	460			0.011	
				44.4 - 45.4	1.0	300			∠0.010	
				46.1 - 48.7	1.6	260			∠0.005	
				51.2 - 52.7	1.5	620			0.015	
				58.2 - 59.4	1.2	340			∠0.010	
				62.4 - 63.6	1.2	200			∠0.005	
156	90.0		3.2-85.7	3.2 - 56.6		salted				
				56.6 - 57.5	0.9	23000			0.78	
				66.3 - 68.9	2.6	640			0.013	

* From top to bottom depths

Carpenter Ridge

GAMMA-RAY LOG INTERPRETATION

L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
157	60.0		4.3-56.8	26.5 - 32.0		salted				
				32.0 - 32.8	0.8	3600			0.14	
				32.8 - 36.5	3.7	500			0.010	
				37.6 - 38.8	1.2	360			<0.010	
				49.8 - 52.8	3.0	200			<0.005	
				56.2 - 56.8	≥0.6	≥260			≥0.005	
158	?		?	7.7 - 8.9	1.2	200			<0.005	
				25.9 - 27.5	1.6	250			<0.005	
				28.6 - 30.0	1.4	280			<0.010	
				34.0 - 35.2	1.2	530			<0.013	
				36.8 - 38.5	1.7	300			<0.010	
				48.7 - 49.5	0.8	260			<0.010	
				52.0 - 53.5	1.5	200			<0.005	
159	54.0		4.8-49.1	19.4 - 20.0	0.6	8400			0.62	
				41.1 - 42.1		500			0.013	
160	60.0		4.5-57.6	Barren						
161	58.0		3.1-57.2	47.1 - 48.1	1.0	200			<0.005	
				49.3 - 50.2	0.9	240			<0.005	
				52.0 - 54.7	2.7	200			<0.005	
162	50.0		5.0-44.7	11.6 - 12.6	1.0	220			<0.005	
				32.8 - 34.5	1.7	320			<0.010	
				36.2 - 37.3	1.1	540			<0.014	
				39.6 - 40.7	1.1	420			0.010	
163			Not logged							
164	46.0		3.2-45.3	Barren						

* From top to bottom depths

GAMMA-RAY LOG INTERPRETATION

Carpenter Ridge
L.A. Griffith -- DMEA

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
165	52.0		3.9-49.6	33.0 - 34.2		200			<0.005	
166	52.0		3.8-49.6	Barren						
167	52.0		4.5-50.6	47.9 - 49.2	2.3	340			<0.010	
				50.0 - 50.6		≥240			≥0.005	
168	45.0		4.3-42.7	14.3 - 29.2		salted				
				29.2 - 30.1		32,000			1.1	
				30.1 - 42.7		salted				
169	49.0		4.9-45.4	18.1 - 21.0	2.9	280			<0.010	
				21.0 - 24.1	3.1	440			<0.010	
				24.1 - 30.0	5.9	300			<0.010	
				36.6 - 37.3	0.7	300			<0.010	
170	42.0		3.6-39.4	30.1 - 31.6	1.5	280			<0.010	
171	40.0		3.3-35.2	19.0 - 20.8	1.8	1600			0.035	
172	40.0		3.5-37.3	33.1 - 34.5	1.4	220			<0.005	
173	42.0		4.0-40.2	27.7 - 28.7		540			0.014	
				31.9 - 34.4		200			<0.005	
174	48.0		3.4-45.7	26.7 - 28.0	1.3	440			<0.010	
				41.2 - 42.0	0.8	220			<0.005	
				43.7 - 45.2	1.5	200			<0.005	
175	59.0		3.6-51.9	21.8 - 24.0	2.2	240			<0.005	
				25.8 - 27.8	2.0	240			<0.005	
				29.4 - 32.7	3.3	240			<0.005	
				44.4 - 46.9	2.5	240			<0.005	

* From top to bottom depths

Carpenter Ridge
L.A. Griffith -- DMEA

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
176	45.0		4.3-42.5	20.7 - 22.1	1.4	2400			0.061	
				22.1 - 25.1	3.0	1300			0.026	
				25.1 - 26.8	1.7	750			0.017	
				32.6 - 34.4	1.8	460			<0.010	
177	40.0		3.9-37.5	17.2 - 18.2	1.0	240			<0.005	
				19.2 - 21.3	2.1	230			<0.005	
				29.0 - 29.9	0.9	220			<0.005	
				33.1 - 35.1	2.0	240			<0.005	
178	40.0		4.8-34.9	17.3 - 18.2	0.9	21500			0.74	
				22.7 - 23.7	1.0	560			0.014	
179			Not drilled							
180	47.0		5.1-44.7	28.7 - 29.8	1.1	200			<0.005	
				36.2 - 37.3	1.1	280			<0.005	
181	47.0		3.7-45.4	16.0 - 17.0	1.0	380			<0.010	
				17.8 - 18.9	1.1	540			<0.014	
				19.5 - 20.8	1.3	300			<0.010	
				24.5 - 25.7	1.2	220			<0.005	
				43.7 - 45.1	1.4	380			<0.010	
182	58.0		5.1-56.7	32.8 - 34.1	1.3	320			<0.010	
183	60.0		4.6-58.4	38.6 - 40.4	1.8	200			<0.005	
				56.5 - 57.8	1.3	200			<0.005	
184	75.0		5.1-73.3	60.0 - 61.2	1.2	280			<0.010	
				69.1 - 73.3	3.2	230			<0.005	

* From top to bottom depths

5/10/55 gla

IN REPLY REFER TO:

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

May 6, 1955

Re: DMEA-3355
Lowell A. Griffith
Assoc.
Montrose Co., Colo.
$16,305.00 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Final Field Team report

I concur with the Field Team and recommend that the project be certified.

I doubt, however, that the inferred tonnage (428) should be included in the certification.

R. D. Trace

R. D. Trace

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

Defense Materials Administration
RECEIVED
APR 22 1955

April 21, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: Field Team report of examination, DMEA Docket 3355, Contract Idm-E703, L. A. Griffith Associates, Shamrock group of claims, Montrose County, Colorado

I have reviewed the Field Team report of examination, DMEA Docket 3355, Contract Idm-E703, L. A. Griffith Associates, Shamrock group of claims, Montrose County, Colorado; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We concur with the Field Team that a Certification of Discovery or Development is recommended on the basis of ore discoveries made during the course of exploration under DMEA 3355.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford

John E. Crawford

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 21 1955

224 New Customhouse
Denver 2, Colorado

April 18, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - DMEA Docket 3355, Contract Idm-E703, Lowell A. Griffith Associates - Colorado

Enclosed is settlement sheet covering Lot No. 6114 on ore shipped by Lowell A. Griffith Associates to United States Vanadium Company.

Also enclosed is United States Vanadium Company check No. 588 in the amount of $71.01 in payment of royalty due on this shipment.

W. M. TRAVER,
W. M. Traver

Enclosures

Copy to: Sec. Opr. Comm. (2) w/settlement sheet
J. P. Shaw w/settlement sheet
Royalty File E703
Chron

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Uravan, Colo. Uravan, Colorado April 4, 1955
Liquidation No. 6114 Lot No. See Road Detail Shippers Lot No.
Bought of Griffith Uranium Company A.E.C. License No. R-1770
Address Uravan, Colorado
Type of Ore Carnotite Date Received 3/16/55 to 3/31/55
Mining Claim Paper #1 Mining District Paradox-Cayonta Flats Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	113040	3.8	108756.88	0.21	1.43	Average	223.55	1551.09	

PRICED PER A.E.C. CIRCULAR NO. 51 (Revised)

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U308 Payment	223.55	3.50	54.38		782.43	
Development Allowance	223.55	.50	54.38		111.78	
Excess 4 lbs. per ton Premium	6.03	.75	54.38		4.52	
Excess 10 lbs. per ton Premium						
Total U308 Payment						898.73
V205 Payment	1551.09	.31	54.38		480.84	
Total V205 Payment						480.84
Less High Line Penalty over 6% CaCo3						
Base Penalty						
___%—___%=___% Penalty @ $ .04 per 1/10th						
TOTAL						
Haulage Allowance 12 Miles 56.52 Wet Tons @.06 per wet ton mile						40.69
Total U3O8, V2O5 and Haulage Payment						1420.26

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V2O5 and Haulage Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number	586	Date	4-5-55
Check Number	586	Date	4-5-55
Approved for Payment	J. Brenton		

Seller or Agent

DMEA
Date Rec'd.
MAY 11 19
BUREAU OF MI
Denver, Color

1000 THE SENTINEL PRINTERS

E903

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

COPY

224 New Customhouse
Denver 2, Colorado

April 12, 1955

FINAL F.T. RPT.

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 3355 (Uranium), Contract Idm-E703, Lowell A. Griffith and Associates, Montrose County, Colorado

Enclosed are the following final reports pertaining to work completed under the subject contract:

1. Original and one copy of the operator's final report.

2. Original and three copies of the final geologic report by the U.S. Geological Survey.

3. Original and three copies of the final engineering report by the U.S. Bureau of Mines.

Final payment to the operator was processed by this office April 6, 1955, in conformance with the Report of Review by the Contract Administration and Audit Division dated April 5, 1955.

The exploration work consisted of 12,350 feet of rotary drilling and analysis of 50 samples at a total accepted cost of $16,305.00 in which the Government participated to the extent of 75% or an amount of $12,228.75.

The exploration work resulted in the discovery or development of a substantial reserve of uranium ore, on which recommendations relative to the issuance of a certification of discovery or development were forwarded to the Washington office, DMEA, by memorandum of April 11, 1955.

/s/ W. M. Traver

/s/ E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

/DMEA
Date Rec'd.
APR 11 1955
BUREAU OF MINES
Denver, Colorado

Defense Minerals Administration
RECEIVED
APR 14 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

April 8, 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3355 (Uranium), Contract Idm-E 703, Lowell A. Griffith Associates, Montrose County, Colorado. Final Geologic Report.

Enclosed are 10 copies of a final geologic report by C. T. Sumsion, U. S. Geological Survey, covering the geologic aspects of a program of exploration completed under the above subject contract.

Eleven of the 164 wagon-drill holes completed are in ore grade material but in only two of the eleven holes was the ore over 1 foot thick. The lack of accurate data precludes a computation of ore reserves.

Sumsion concludes that additional Government assistance to explore the property is not warranted but he recommends that the project be certified as a discovery.

The cost figures given on page 4 of the geologic report are, in part, in error and should be disregarded.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (10)

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

MINERAL DEPOSITS
DMEA
RECEIVED
APR 1 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLO.

March 29, 1955

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: W. P. Williams

Subject: Final geologic report on DMEA 3355 (contract Idm-E 703), uranium, Lowell A. Griffith Associates, Montrose County, Colorado

Transmitted herewith are 11 copies of the final geologic report covering DMEA 3355 by C. T. Sumsion.

Of the 164 wagon-drill holes completed in the contract, two are in ore, based on chemical assay data, nine are in ore-grade material, but less than 1 foot thick based on USGS gamma-ray logging, nine are weakly mineralized (less than 0.10 percent eU_3O_8 but more than 0.02 percent eU_3O_8), based on gamma-ray logging, and 144 holes are in barren ground.

Sumsion recommends that DMEA certify the project as a discovery, as he believes production is economically feasible from the two "ore holes" and because private drilling around the mineralized holes may lead to the discovery of ore bodies. He does not calculate any ore reserves for the property because he lacks the adequate assay data necessary to do this.

I concur with Sumsion's recommendation that the project be certified as a discovery.

W. P. Williams
W. P. Williams,
Geologist

TEM/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3355 (contract Idm-E 703) Lowell A. Griffith Associates
Montrose County, Colorado

Uranium

Final Geologic Report

by

C. T. Sumsion, Geologist
U. S. Geological Survey

March 25, 1955

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

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DMEA 3355

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Lowell A. Griffith Associates of Golden, Colorado, have completed defense Minerals Exploration Administration contract No. Idm-E 703. Exploratory wagon drilling for uranium-vanadium in the basal Salt Wash sandstone was performed on seven mining claims in the Carpenter Flats area, Montrose County, Colorado. The claims explored by drilling are the Shamrock No. 2, No. 3, and No. 4, Piper No. 1, No. 2, and No. 3, and Outlet. The Outlet claim belongs to Lowell A. Griffith; the other six are owned by K. M. Andrews and D. K. Andrews of Nucla, Colorado and are leased to Lowell A. Griffith Associates.

The seven mining claims are in the Carpenter Flats area, Montrose County, Colorado, and lie within the W. one-half of sec. 14 and the E. one-half of sec. 15, T. 48 N., R. 18 W., New Mexico principal meridian (fig. 1).

About 30 acres of the total area of the seven mining claims were explored by wagon drilling under the DMEA contract. The location and classification of the drill holes are shown on figure 2.

Of 164 wagon-drill holes completed, two are in ore, 0.1 percent or more U_3O_8 or 1.0 percent or more V_2O_5, and 1 foot thick, based on assay data; nine are in material of ore grade but less than 1 foot thick, based on gamma-ray logging of holes by the U. S. G. S.; and nine were classified as weakly mineralized, less than 0.1 percent but greater than 0.02 percent U_3O_8 based on gamma-ray logging data. The remaining 144 wagon-drill holes are in essentially barren material by both gamma-ray log and assay data.

Mineralized rock was penetrated in areas on the Piper No. 2 and No. 3 mining claims (fig. 2). Additional privately financed development drilling is warranted in the vicinity of holes 153, 154, 156, and 159, and in the vicinity of holes 119 and 120. The lack of adequate assay data precludes computing the grade and tonnage of ore reserves discovered by the DMEA contract drilling.

Gamma-ray log results indicate the presence of thin but high-grade material, and it is believed that (1) production is economically feasible, (2) DMEA should certify that the project is successful, and (3) the Government is entitled to royalties from production. No further exploration with Government assistance is recommended in the area of these seven claims.

HISTORY

Drilling began on September 21, 1954 and was completed on November 9, 1954. The 164 wagon-drill holes were spaced about 100 feet apart and ranged in depth from 40 feet to 120 feet. Total footage drilled was 12,567 feet. Operations were efficiently performed with the possible exception of the manner in which wagon drill hole samples were collected for assay. Assay samples were made of 5-foot intervals, and a copy of the applicant company's assay table is included as table 2. The company's method of sampling was unsatisfactory in that a true thickness of any ore penetrated within the 5-foot interval cannot be ascertained. The data provided by U. S. Geological Survey 'Barnaby' gamma-ray hole logging

gives the closest estimate to the thickness of U_3O_8 values discovered by wagon drilling, (Table 2). Ore-grade material as determined by assay data does not consistently agree with gamma-ray evaluations, owing to the different thicknesses represented.

GEOLOGY

The principal rocks exposed in the ground explored in the Carpenter Flats area consist of 40 to 120 feet of interbedded sandstones and mudstones comprising the lower part of the Salt Wash member of the Jurassic Morrison formation. The upper part of the Salt Wash member has been eroded away in the Carpenter Flats area. About 80 to 100 feet of predominantly red shale and argillaceous sandstone of the Summerville formation underlies the Salt Wash, and separates the Salt Wash from the Entrada sandstone. The Summerville and Entrada sediments have no apparent relationship to the known deposits in the Carpenter Flats area and were not considered in the exploration program.

The basal 30 to 70 feet of Salt Wash in the Carpenter Flats area is a persistent light-brown sandstone lens that forms a nearly vertical rim. In places, thin green and red mudstone layers are present in this sandstone. The mudstone underlying this sandstone lens is generally red although locally green mudstone two feet or more thick may be in contact with the sandstone. Carbonaceous material is locally abundant in the sandstone. Most of the surface in the Carpenter Flats area is on the top of the basal Salt Wash sandstone lens or on the overlying red mudstone beds.

The known ore deposits in this part of the Carpenter Flats area are in the basal Salt Wash sandstone lens and all wagon drilling explored this lens for deposits. In some places a second Salt Wash sandstone forms a bench surface. This sandstone is about 40 to 50 feet stratigraphically above the basal Salt Wash sandstone lens and is relatively thin . It is mostly red-brown in color and is not considered a favorable host rock for minable uranium-vanadium deposits. The strata in this part of the Carpenter Flats area strike about N 45° W and dip about 4° NE toward the axis of the northwest-trending San Miguel syncline.

Ore deposits discovered by exploratory wagon drilling in the basal Salt Wash sandstone are believed to be thin and representative of the high-grade but small deposits most commonly found in the basal Salt Wash sandstone lens. An accurate estimate of ore reserves cannot be made because of the quality of assay data.

EXPENDITURES

Total approved - - - - - - - - - - - - - - -	$18,350.00
Total cost of project- - - - - - - - - - - -	13,760.30
Government's share of cost - - - - - - - - -	13,762.50
Government's share unexpended- - - - - - -	2.20

Equipment purchased consisted of 2500 sample bags at 2 cents each. These have no salvage value and were regarded as expendable items.

PRODUCTION DATA

Based on the production record given in his final report, the applicant shipped 23.877 short tons of ore averaging about 0.46 percent U_3O_8 and 2.89 percent V_2O_5 and valued at $1,306.40 including haulage allowance from the Shamrock group prior to DMEA participation.

Production during DMEA contract operations

Shamrock No. 3

Date	Mill	Short tons dry	Percent U_3O_8	Percent V_2O_5	Value *
Sept. 22, 1954	Uravan	10.245	1.29	5.04	$1,600.62
Sept. 28, 1954	Naturita	4.465	0.46	2.47	257.33
Nov. 12, 1954	Uravan	10.802	0.61	2.37	774.46
Dec. 3, 1954	Naturita	6.210	0.69	2.25	493.18
Total		31.722			3125.69

Leasers Karen and Moore, Piper Triangle

Nov. 12, 1954	Uravan	8.763	0.21	2.35	278.06
Nov. 15, 1954	Naturita	18.721	0.25	2.31	686.48
Dec. 4, 1954	Naturita	6.490	0.23	1.87	202.47
Total		33.884			1167.01

* Includes haulage allowance.

Through personal communication with the applicant, it was determined that about 70 short tons of ore were shipped, averaging 0.35 percent U_3O_8 and 2.13 percent V_2O_5 and valued at $3,081.05 including haulage allowance from the Shamrock group (including leaser's shipments) between the termination of DMEA drilling and January 20, 1955.

Table 1

COMPANY ASSAY DATA

Hole No.	Sample interval	Percent U_3O_8	Percent V_2O_5
39	37 - 38	0.00	0.04
50	25 - 30	0.00	0.03
61	50 - 55	0.06	0.26
69	30 - 35	0.00	0.12
73	35 - 40	0.00	0.03
73	40 - 45	0.02	0.00
78	55 - 60	0.01	0.01
78	60 - 65	0.01	0.00
78	65 - 70	0.00	0.00
78	70 - 75	0.01	0.01
81	60 - 65	0.01	0.00
66	45 - 50	0.01	0.01
71	36 - 37	0.02	0.05
81	65 - 70	0.00	0.00
82	52 - 53	0.06	0.66
84	40 - 45	0.01	0.00
94	40 - 45	0.03	Tr
104	70 - 75	0.03	0.03
119	50 - 55	0.26	2.23
119	50 - 55	0.21	2.27
153	47 - 51	0.13	0.42
153	51 - 52	0.04	0.02
153	50 - 55	0.02	0.01
154	40 - 45	0.03	0.15
154	35 - 40	0.01	0.06
154	50 - 55	0.01	0.02
155	30 - 35	0.01	0.03
155	35 - 40	0.01	0.02
155	35 - 40	Tr	0.02
155	45 - 50	Tr	0.01
155	50 - 55	0.01	0.07
156	55 - 60	0.60	0.08
157	30 - 35	0.02	0.01
158	25 - 30	0.00	0.03
158	30 - 35	0.00	0.03
158	35 - 40	0.00	0.01
158	45 - 50	0.01	Tr
158	50 - 55	0.00	0.07
159	15 - 20	0.01	0.01
159	40 - 45	0.00	0.05
162	35 - 40	0.00	0.01
162	40 - 45	0.00	0.01
168	25 - 30	0.03	0.04
168	30 - 35	0.03	0.10

Table 1 --- Continued

Hole No.	Sample interval	Percent U_3O_8	Percent V_2O_5
169	15 - 20	0.00	0.01
169	20 - 25	0.00	0.03
169	25 - 30	0.07	0.03
171	20 - 25	0.01	0.02
176	20 - 25	0.02	0.02
178	15 - 20	0.09	0.67

Table 2

EVALUATIONS OF GAMMA-RAY LOGS
(Holes classified as barren are not listed)

Hole No.	Total Depth	Logged From To	Anomaly From To	Feet Thick	Counts per Minute	Percent eU_3O_8
39	65.0	62.9 - 5.1	36.3 - 37.1	0.8	1400	0.038
40	50.0	47.7 - 3.9	37.1 - 38.2	1.1	2100	0.058
61	60.0	55.8 - 3.8	54.0 - 54.7	0.7	5000	0.26
64	55.0	44.1 - 5.0	43.4 - 44.1	0.7	3800	0.17
71	60.0	51.6 - 3.8	34.2 - 35.1	0.9	860	0.03
82	76.0	74.8 - 4.6	51.3 - 52.0	0.7	3500	0.16
84	78.0	76.7 - 4.2	43.4 - 44.2	0.8	800	0.03
94	65.0	63.5 - 3.7	42.2 - 44.0	1.8	1550	0.032
104	95.0	91.9 - 3.2	70.0 - 70.7	0.7	5400	0.29
119	70.0	68.4 - 4.6	53.6 - 54.2	0.6	26500	1.3
120	70.0	67.8 - 6.0	66.9 - 67.8	0.9	920	0.022
153	60.0	60.8 - 3.8	54.2 - 54.8	0.6	13500	0.680
154	60.0	57.5 - 3.1	35.3 - 37.4	2.1	1500	0.030
			38.1 - 38.7	0.6	1100	0.036
			39.4 - 40.3	0.9	3800	0.15
			40.9 - 42.1	1.2	2200	0.06
156	90.0	85.7 - 3.2	56.6 - 57.5	0.9	23000	0.78
157	60.0	56.8 - 4.3	32.0 - 32.8	0.8	3600	0.14
159	54.0	49.1 - 4.8	19.4 - 20.0	0.6	8400	0.62
168	45.0	42.7 - 4.3	29.2 - 30.1	0.9	32000	1.1
171	40.0	35.2 - 3.3	20.8 - 19.0	1.8	1600	0.035
176	45.0	42.5 - 4.3	20.7 - 22.1	1.4	2400	0.061
			22.1 - 25.1	3.0	1300	0.026
178	40.0	34.9 - 4.8	17.3 - 18.2	0.9	21500	0.74

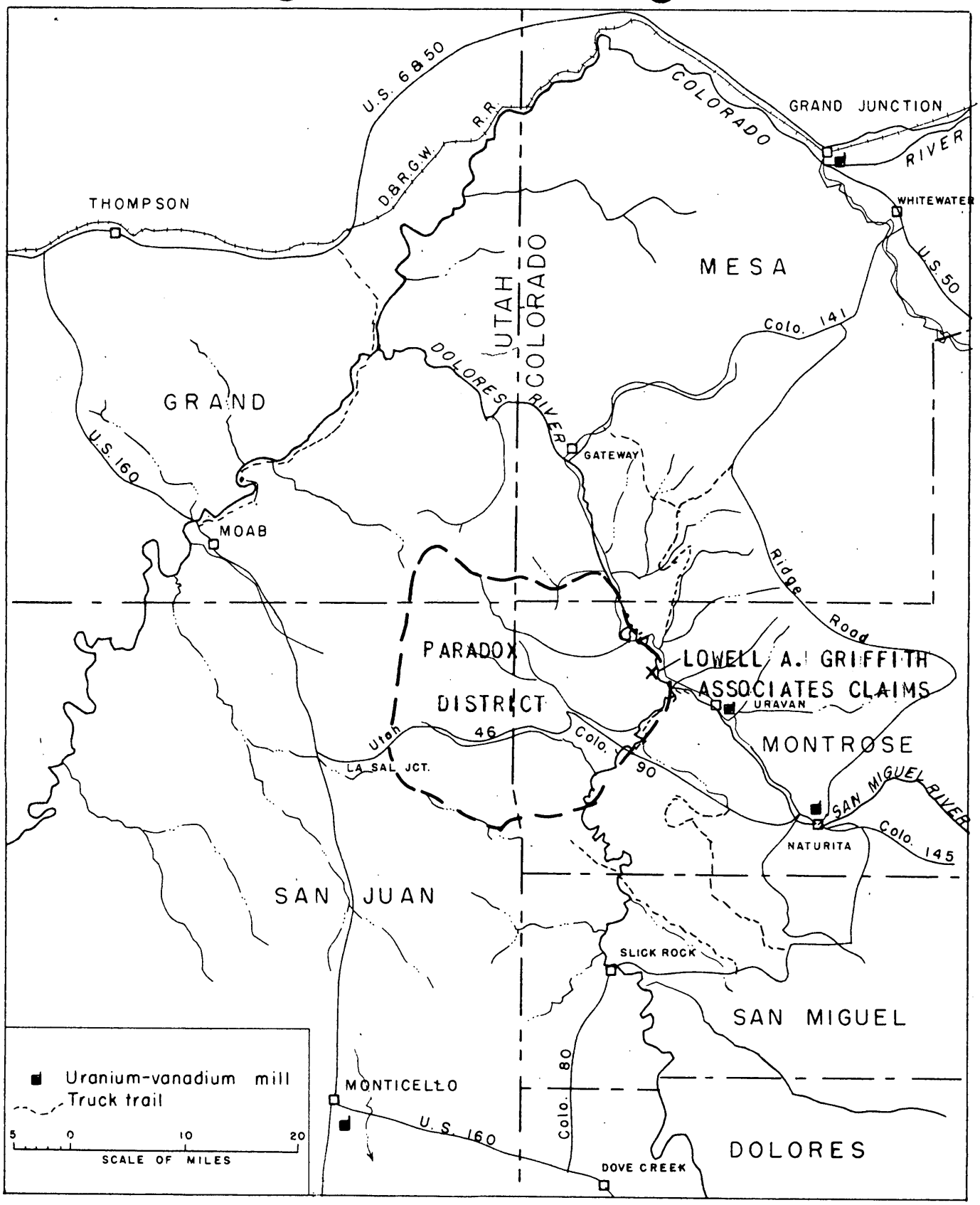
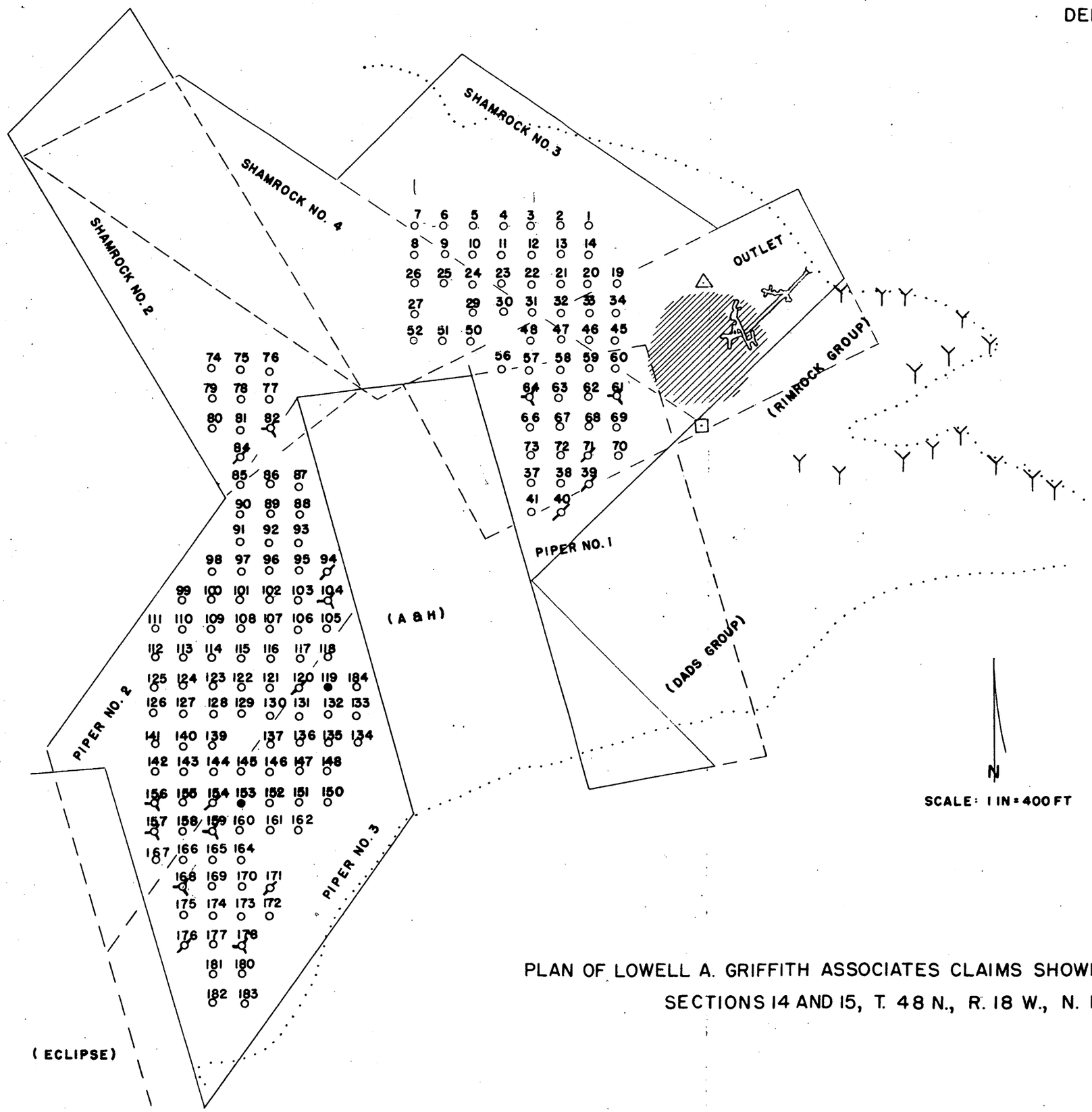


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING THE APPROXIMATE LOCATION OF LOWELL A. GRIFFITH ASSOCIATES MINING CLAIMS, CARPENTER FLATS AREA, MONTROSE COUNTY, COLORADO

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3355



EXPLANATION

APPROXIMATE BASE OF LOWEST SALT WASH SANDSTONE LENS.

WAGON-DRILL HOLES. CLASSIFICATION BY GRADE (BASED ON CHEMICAL ASSAY AND/OR GAMMA-RAY DATA) AND THICKNESS.

- BARREN.
- WEAKLY MINERALIZED. (CONTAINS LESS THAN 0.1% U_3O_8 BUT 0.02% OR MORE U_3O_8 BY GAMMA-RAY ONLY).
- STRONGLY MINERALIZED (CONTAINS 0.1% OR MORE U_3O_8 BUT LESS THAN 1 FOOT THICK BY GAMMA-RAY ONLY).
- ORE (CONTAINS 0.1% U_3O_8 OR MORE 1 FOOT OR MORE THICK BY CHEMICAL ASSAY ONLY).

U. S. GEOLOGICAL SURVEY TRIANGULATION POINT ARBITRARILY CHOSEN AS A REFERENCE POINT FOR THE LOCATION OF WAGON-DRILL HOLES.

APPROXIMATE AREA OF GROUND PREVIOUSLY DRILLED.

APPROXIMATE LOCATION OF 1/4 LAND SECTION CORNER.

ADIT AND UNDERGROUND DRIFT

PROSPECT

NOTE: HOLES ARE NOT IN NUMERICAL SEQUENCE AND WERE NOT DRILLED IN NUMERICAL SEQUENCE. HOLES 15-18, 28, 35-36, 42-44, 49, 53-55, 65, 83, 138, 149, 163, AND 179 WERE NOT DRILLED

SCALE: 1 IN = 400 FT

FROM A MAP BY R. L. BOARDMAN

PLAN OF LOWELL A. GRIFFITH ASSOCIATES CLAIMS SHOWING LOCATION OF WAGON-DRILL HOLES
SECTIONS 14 AND 15, T. 48 N., R. 18 W., N. M. P. M.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DMEA
Date Rec'd
APR 4 1955

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
April 4, 1955

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
APR 14 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw, Supervising Mining Engineer

Subject: DMEA 3355, Contract Idm-E703 (Uranium), Final Engineering Report, Shamrock Group, Lowell A. Griffith Associates, Montrose County, Colorado

Enclosed are the original and ten copies of a final engineering report prepared by M. H. Salsbury, mining engineer, covering Contract Idm-E703.

The contract authorized 171 rotary drill holes totalling 13,500 feet. Seven of these holes were at locations that would be accessible with difficulty and were not drilled. The operator completed 164 holes totalling 12,567 feet. The operator was not reimbursed for one of these holes which was at an unauthorized location. The total authorized footage was 12,350 feet. Twenty-six holes contained a significant amount of uranium as indicated by radiometric analyses. Ore was found at different elevations in adjoining drilled holes, which indicates that the ore jumps from one horizon to another. The estimated inferred ore reserve is 428 tons, containing 0.44 percent U_3O_8.

It is recommended that a Certification of Discovery be made.

John F. Shaw

John F. Shaw

cc 10
Idm-E703
DMEA Chron

JFS/cm

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

FINAL ENGINEERING REPORT

DMEA 3355, Exploration Project Contract Idm-E703

Shamrock Group

Lowell A. Griffith Associates

Montrose County, Colorado

Uranium

M. H. Salsbury, Mining Engineer

March 30, 1955

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

DMEA 3355
Contract Idm-E703

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

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ILLUSTRATIONS

Figure — Follows page

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2. Shamrock and Piper claims showing claim boundaries, DMEA drill holes, holes in ore, and location of inferred reserve, L. A. Griffith Associates (Uranium), Montrose County, Colorado..... 8

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DMEA 3355
Contract Idm-E703

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

FINAL ENGINEERING REPORT

By

M. H. Salsbury

SUMMARY AND INTRODUCTION

In 1954, Lowell A. Griffith Associates, a partnership, in care of Paul Keating, Box 163, Golden, Colorado, applied for Government assistance under the Defense Minerals Exploration Administration for exploration by wagon drilling of their leased property on Carpenter Flat, Montrose County, Colorado.

The project consisted of 16,000 feet of wagon drilling in 210 holes at an estimated cost of $1.50 per foot or $24,000.00. The amount of Government participation at 75 percent was $18,000.00.

A field examination was made on May 18, 1954, by a Region III examining team accompanied by L. A. Griffith, a partner, and the superintendent of the project. After a field conference, the applicant revised the drilling program and presented a new proposal, eliminating exploration near property boundaries and in an area which had already been drilled. This program consisted of 13,500 feet of wagon drilling in 171 holes and was recommended for approval at an estimated maximum cost of $18,355.00. The amount of Government participation at 75 percent was $13,766.25.

Reviewed by
DMEA OPERATING COMMITTEE
4-20-55
(date)

The project was approved, and a contract in the amount of $18,350.00 and dated September 9, 1954, was signed. The amount of Government participation was $13,762.50. Exploration was to be completed before June 9, 1955.

Drilling under the contract was started September 21, 1954, and completed in November 1954. All but seven of the authorized holes were drilled. With the consent of the Government, dry rotary drilling was substituted for wagon drilling at no increase in cost.

The project was carried on efficiently, and operating and technical supervision was satisfactory. The quality of the unusually complete monthly and final narrative reports submitted by the operator's representative, Mr. Paul H. Keating, was excellent.

The project resulted in the discovery of uranium ore with a radiometric count exceeding .10 percent U_3O_8 in 12 holes and lesser mineralization in 20 holes. A small reserve of inferred ore estimated at 428 tons averaging 0.63 feet in thickness, with an average content of 0.44 percent U_3O_8, has been delimited by drilling. Eight other possible ore deposits were penetrated by drill holes but no reserves could be calculated on the basis of information obtained in drilling.

A Certification of Discovery or Development is recommended.

LOCATION, HISTORY, PRODUCTION AND OWNERSHIP

The property is located on the northeast rim of the mesa between Bee Hive and Red Canyons overlooking the Dolores River in Montrose County, Colorado. It adjoins the mesa area called Carpenter Flats, in secs. 14, 15, 22, and 23; T. 48 N., R. 18 W., New Mexico principal

meridian (fig. 1). Access is by a new road and bridge over the Dolores river built for the Atomic Energy Commission which connects with Colorado State Highway 141, 9 miles northwest of Uravan, Colorado. The nearest ore buying stations are at Uravan and Naturita, Colorado, 11 miles and 23 miles from the property respectively. Grand Junction, Colorado, the nearest major supply center, is 85 miles distant over improved Colorado State Highway 141 and U. S. Highway 50, 24 miles of which is hard-surfaced.

Mining history on Carpenter Flats dates from exploration of the area prior to World War I, when rim deposits were mined for vanadium. The Eclipse claims which adjoin the Shamrock group on the west may have produced several hundred tons of ore. These workings are accessible. Mining was dormant until 1949 when the demand for uranium caused renewed interest and resulted in a limited amount of exploration prior to the DMEA project. Two other small areas were developed and are being mined, one on the Dad's claim and the Piper Triangle south of the Shamrock claims, and the other on the Outlet claim, which is one of the claims of the DMEA project. Following is a list of the known production through November 15, 1954. None of this ore was discovered as a result of the Government assisted exploration, although it came from claims which were subordinated:

Claim	Period covered	Dry tons	Content percent U_3O_8	Content percent V_2O_5
Dad's	Prior to May 1954	202	0.42	1.85
Outlet	prior to May 1954	6	0.50	2.4
Outlet	May-November 1954	49,389	0.65	2.94
Piper Triangle	November 1954	27.394	0.24	2.32
	Total	284.783	0.44	2.10

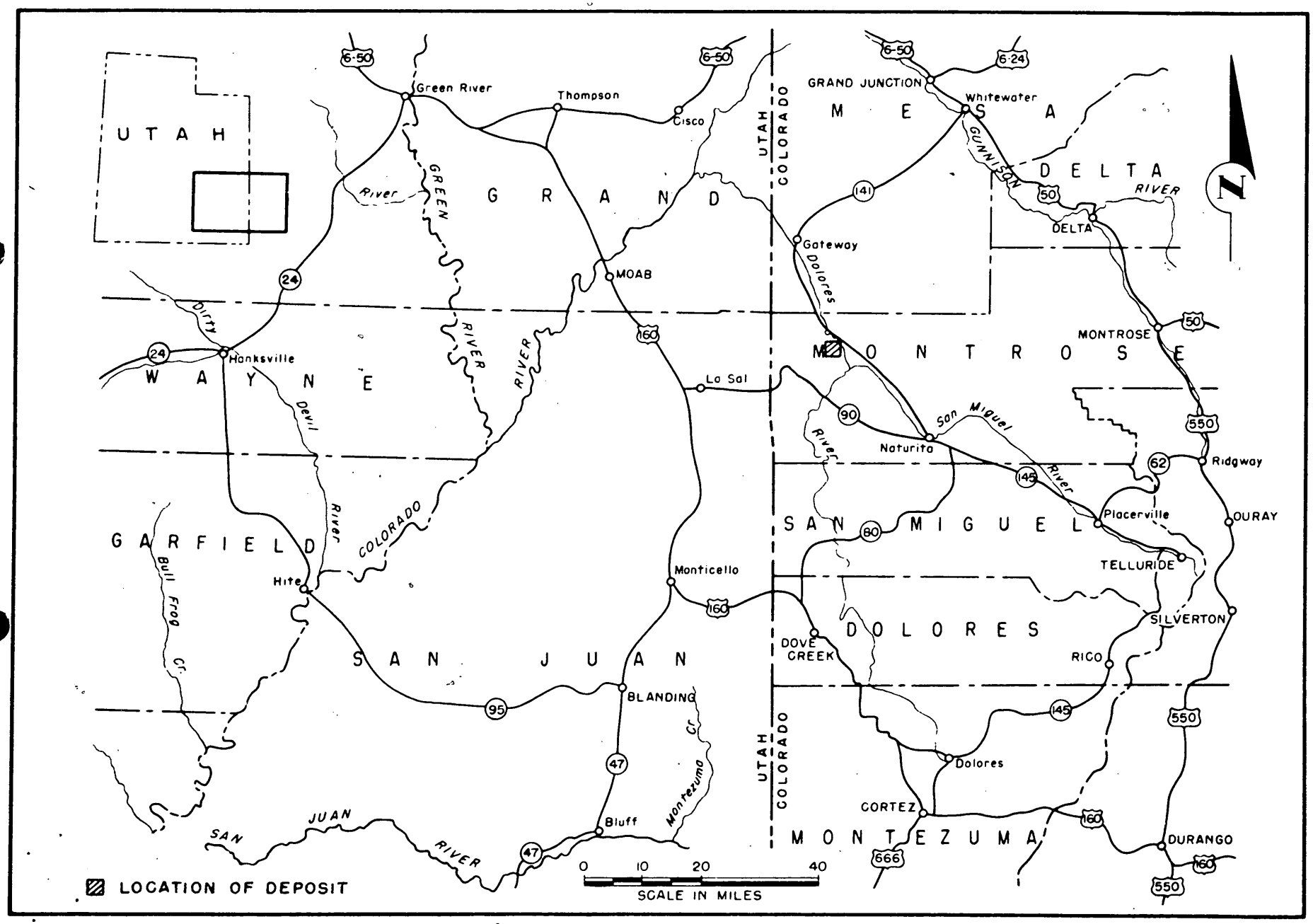


FIGURE 1 - LOCATION MAP, SHAMROCK GROUP, LOWELL A. GRIFFITH ASSOCIATES, MONTROSE COUNTY, COLO. (DMEA 3355)
Contract Idm - E703

The total production contained 2506.09 pounds of U_3O_8 and 11,968.86 pounds of V_2O_5. L. A. Griffith Associates report that, according to the AEC bonus certification, 6,500 pounds of uranium oxide have been produced to date from all the ground held by them. This includes production from other claims; which were not included in the DMEA project, and assuming that production totals listed in this report are complete, it amounts to about 4,000 pounds of uranium oxide.

The property consists of 13 unpatented claims owned by K. M. Andrews and D. K. Andrews of Nucla, Colorado, and leased to L. A. Griffith, trustee, who assigned one-half interest to the Construction Specialties Company of 2625 Walnut Street, Denver, Colorado. Of the 13 claims, only the 7 shown in figure 2 were included in the DMEA project:

Claim	Date recorded	Book	Page
Piper No. 1	March 30, 1953	349	567
Piper No. 2	March 30, 1953	349	567
Piper No. 3	March 30, 1953	349	568
Shamrock No. 2	April 13, 1950	343	9
Shamrock No. 3	April 13, 1950	343	10
Shamrock No. 4	April 13, 1950	343	11
Outlet	April 15, 1954	--	--

A check on the claims indicated that the location and recording procedures were in order, and that there was no conflict with prior oil and gas leases. Possible conflicts with a "museum site" and a "power site" which were shown on land plats in the Bureau of Land Management records were checked but did not affect the area in which exploration was proposed. Validity of the title appeared to be satisfactory.

L. A. Griffith Associates is a partnership consisting of L. A. Griffith, Paul H. Keating, and the Construction Specialties Company. The interest of each partner has not been stated. Paul H. Keating acted for the partnership under a power of attorney.

DESCRIPTION OF THE DEPOSIT

The uranium deposits on the Shamrock claims occur in the lowest rim or horizon of the Salt Wash member of the Jurassic Morrison formation. All but remnants of overlying formations have been removed by erosion. The ore minerals are carnotite and other altered uranium and vanadium minerals associated with abundant carbonaceous material in thick sandstone ledges. The deposits are small but high grade and may consist of nothing more than mineralized logs. The deposit on the Eclipse claim first mined prior to World War I appears to have been roughly tabular in shape, with a maximum lateral dimension of perhaps 100 feet and an average thickness not over 1 foot. The mineralized area had many barren spots. The deposits found in the Outlet tunnel were small rolls localized around mineralized logs. The one definite deposit outlined by the exploration just completed is probably the small tabular type with perhaps local enrichments around logs. The ore in what is considered to be an individual deposit may jump from one bed to another within the same sandstone unit.

Development has consisted of a number of small openings along rim exposures and several tunnels driven on the ore horizon from these rim outcrops. One of these tunnels on the Dad's claim (Mal Pais mine), also owned by K. M. and D. K. Andrews, furnished most of the recorded production of the property from small "roll" deposits.

On the Outlet claim a tunnel has been driven 400 feet on a course S. 45° W. to intersect some ore cut in a wagon drill hole in 1953. This was one of nine holes drilled by the owners of the claims prior to the present lease. Two of the nine were reported to contain ore although no records of drilling results were kept. At the time of the last inspection by a Bureau of Mines engineer in December 1954, the tunnel workings had reached the first objective and a small ore body was being mined. This ore deposit and several rolls encountered in the tunnel may total a maximum of 100 tons of 0.50 percent U_3O_8.

WORK COMPLETED UNDER CONTRACT

During the project 164 holes totalling 12,567 feet of drilling out of 171 holes totalling 13,500 feet authorized, were completed at locations shown in figure 2. A total of 163 holes and 12,439 feet of drilling was approved for payment, deduction being made for hole No. H-45 drilled at an unauthorized location. Other discrepancies, discovered in engineering audits, reduced the total authorized footage to 12,350 feet. Adjustment of payments in accordance with corrections is to be made before final payment. Seven authorized holes which were not drilled proved to be at inaccessible locations.

The drilling was done under contract by Scott Brothers of Lubbock, Texas, at a contract price of $.90 per foot. The equipment used was a Mayhew rotary air drill, truck mounted, drilling a dry 4-1/4-inch hole.

Sampling Procedures

At the start of the project, drill cuttings were collected in a "Duclone" type collector mounted on the truck connected by a 6-inch

flexible hose leading to a canvas enclosure around the hole collar. It was soon apparent that the coarse cuttings were not being lifted into the collector but were being dropped around the hole collar. At the suggestion of L. A. Griffith a collection box was fabricated and placed in the dust collection circuit 2 feet from the collar of the hole. The steel box was 3 feet long with a removable tray and had a cross-section about three times that of the hose. The decrease in velocity and turbulence of the dust stream at the collar of the hole caused drill cuttings to drop out in the box, and only the finer material was carried into the Duclone. Samples composed of both coarse and fine cuttings were taken for each 5-foot interval of hole, cut to 15 pounds, and stored in paper bags. The cuttings were tested at the drill rig with a Geiger counter and the holes were probed by the operator. Later, most of the holes were reprobed by the Geological Survey with recording equipment.

Samples in which significant uranium count was indicated were analyzed chemically for U_3O_8 and V_2O_5. Table I gives the results of 50 chemical analyses for U_3O_8 and V_2O_5, made by Minerals Assay Laboratory, Grand Junction, Colorado. Also listed are results of hole probing by the operator and by the Geological Survey. Comparison of the several determinations is made where possible.

Supervision of the project fulfilled all requirements, and suggestions made by the inspecting DMEA engineer were acted on promptly. As an example, during the September inspection it was noted that cutting samples were being collected by taking a shovel full out of the pile and were not representative of the full 5-foot interval.

Mr. Griffith changed the procedure immediately, cutting a sample out of all the cuttings obtained in a sampling interval of 5 feet. On his own initiative he devised and installed the box to collect coarse cuttings efficiently. The operator conformed to the requirements of the contract regarding saving and analyzing cuttings. The performance of the rotary dry drill was completely satisfactory, but bit wear proved to be more severe than anticipated.

DESCRIPTION OF THE DISCOVERY

Altogether, 7 drill holes penetrated ore with a grade of over 0.20 percent eU_3O_8, as indicated by radiometric analyses; 5 holes were estimated at 0.10 and 0.20 percent eU_3O_8, and 14 holes less than 0.10 percent eU_3O_8. Six additional holes were mineralized, but the uranium content was only a trace (fig. 2). Ore was found at different elevations in adjoining drill holes, which indicates that it jumps from one horizon to another.

For the most part, judging from occurrences in the Outlet Tunnel, the deposits are likely to be small discontinuous bodies of uranium-vanadium ore with a maximum lateral dimension of 50 feet. At the northwest end of the Piper No. 2 and Piper No. 3 claims, 5 holes penetrated ore containing more than 0.20 percent eU_3O_8, 1 hole contained ore ranging between 0.10 and 0.20 percent eU_3O_8 and 7 holes less than 0.10 percent eU_3O_8. Two other isolated holes on the same claims encountered ore containing more than 0.20 percent eU_3O_8. One hole on the Shamrock No. 2 claim and 3 holes, 2 of them adjacent, on the Piper No. 1 claim encountered ore containing between 0.10 and 0.20 percent eU_3O_8. There are 20 other holes which contained from a trace to 0.10 percent eU_3O_8.

According to the criteria developed by the Ore Reserve Branch of the Atomic Energy Commission, only 1 group of 3 adjacent holes drilled during this project can be used as a basis for a reserve estimate and even this estimate is open to question. According to the Commission the hole spacing of 100 feet is too wide to establish continuity of ore in Salt Wash horizons. The maximum spacing for accurate reserve calculations is considered to be 50 feet. Isolated holes, even where ore running over 0.20 percent U_3O_8 is cut, or holes in which the average content is less than 0.20 percent U_3O_8, no matter how grouped, do not constitute a sound basis for reserve estimates. The validity of reserve estimates is also affected adversely by the limited thickness of the ore, and the evidence that the ore jumps from one bed to another. Both of these conditions are found in the reserve block as well as in other holes.

With these limitations in mind, the following reserve calculations have been made. It is assumed that the area of influence of holes in ore extends 25 feet toward any hole containing less than 0.10 percent U_3O_8 and 50 feet toward an adjacent hole in ore containing more than 0.10 percent U_3O_8. An area on the Piper No. 2 and No. 3 claims containing 19,000 square feet is delimited, using these assumptions. Geological Survey radiometric logging results are used:

Hole No.	Coordinates E	Coordinates N	U_3O_8 content percent	Ore thickness in feet	Percent x thickness
H-154	8300	8200	0.13	0.7	.091
H-153	8400	8200	0.64	0.6	.384
H-159	8300	8100	0.62	0.6	.372
				1.9	.847

Average width of ore $\frac{1.9}{3}$ or 0.63 feet

Average grade of ore $\frac{.847}{1.9}$ 0.44 percent U_3O_8

Volume of ore 19,000 x .63 or 11,970 cubic feet
Maximum tonnage, $\frac{11,970}{14}$ or 855 tons
Tonnage in inferred reserve 50 percent of 855 tons or 428 tons

The calculated tonnage is discounted 50 percent because of the observed habits of ore deposition in the area, such as discontinuity, and distribution of the ore in beds at different elevations. The wide spacing of drill holes is also taken into account.

Of course in the case of an isolated hole in mineable grade ore, there is an area between the hole and the surrounding holes which might contain a substantial ore body, but there is not enough data on which to base an ore estimate.

EXPENDITURES

Under the short-form unit cost contract, a maximum of 13,500 feet of wagon drilling in 171 holes at $1.30 per foot and a maximum of $800.00 for chemical analyses of drill cuttings for U_3O_8 and V_2O_5 was authorized at a total cost of $18,350.00, Government participation at 75 percent was $13,762.50. Amendment No. 1 to the contract, dated September 9, 1954, changed the basis of payment for chemical analysis to a maximum of 160 samples at $5.00 each, without changing the total amount of the contract.

A total of 12,567 feet of dry rotary drilling in 164 holes was claimed and 50 chemical analyses were made. The Government agreed to substitute rotary air drilling for wagong drilling at no extra cost. Seven authorized holes were not drilled because they proved to be at an inaccessible locations. One hole was at an unauthorized location, and one hole was claimed twice. Adjustment for claims for

these holes, and for other minor discrepancies found during an engineering audit will be made before final payment of funds withheld on claims made for the last month's operation in December 1954. Hole logs and a certified assay certificate were furnished as required. Following is a tabulation of work authorized, claimed, and approved for payment:

Month	Progress	Amount claimed
September 1954	2,189 feet of drilling	$ 2,845.70
October 1954	6,393 feet of drilling	8,310.90
November 1954	3,985 feet of drilling	5,180.50
December 1954	50 chemical analyses	250.00
	Total claimed	$16,587.10

Deductions made or to be made, for claims not in accordance with contract terms:

Hole No.	Coordinates E	Coordinates N	Depth in feet by log	Depth in feet claimed	Month claimed	Difference footage claimed overlog + footage claimed underlog -	
H-161	8500	8100	58	53	October	-5	
H-77	8500	9600	69	67	October	-2	
H-61	9700	9600	60	75	October	+15	
H-45	9800	9700	120	+120	October	+120	(unauthorized hole)
	9200	10200	60	70	September	+10	
	9400	9300	60	65	October	+65	This hole was also claimed in September 1954.
	9400	10000	100	108		+8	
	9500	9500	53	54		+1	
	9500	10200	63	68		+5	
	Total unauthorized footage claimed					±217	feet

Total footage claimed - 12,567 feet
unauthorized footage - 217 feet
Authorized footage for 12,350 feet at $1.30 per foot = $16,055.00
which payment can be made
Chemical analyses approved for payment - 50 samples
at $5.00 each = 250.00
Total expenditure which can be approved for payment $16,305.00
Government participation at 75 percent 12,228.75

Payments made

September 1954	$2,134.27		
October 1954	6,233.17		
November 1954	3,760.58	Total payments	$12,128.02
Balance due operator			100.73

Final payment of $100.73 should be made operator in lieu of $187.50 withheld on December 1954 claim.

Final settlement is subject to an audit to be made by the DMEA Contract Administration and Audit Division.

CONCLUSIONS

Execution and supervision of the project were satisfactory and fulfilled all contract requirements. The results of the exploration were not too successful, although a small inferred reserve of mineable ore has been partly delimited or otherwise indicated. Mining of the ore from the one deposit on which a tonnage estimate was made can probably be done at a cost which would return a small profit. The cost of development of the isolated deposits for which no reserve estimate has been made, cannot be justified unless more drilling is done to outline them more completely. The low grade ore drilled on the Piper No. 1 claim could be reached by an extension of the Outlet tunnel, but the other deposits would require new development openings.

Procedures set up for sampling and analyzing cuttings did not furnish the information wanted. The effect of the uranium content of the narrow seams of ore on the assay value of cuttings from corresponding 5-foot drilling intervals was so slight that the resultant increase in the uranium content of the samples was barely noticeable. It was

not possible to judge either the width or grade of ore from chemical analysis of the drill cuttings, so they had very little practical value.

The following table gives a comparison of radiometric determinations obtained by logging holes and the corresponding chemical analyses:

Sample No.	Depth in feet	U_3O_8 per-cent	(USGS results) eU_3O_8 %	Ratio eU_3O_8: U_3O_8	Width U_3O_8 sample feet	Width eU_3O_8 sample feet	Ratio width U_3O_8: width eU_3O_8
H-61	50 to55	0.06	0.20	3.3:1	5.0	1.2	4.1:1
H-82	52 to 53	0.06	0.16	2.7:1	1.0	0.7	1.7:1
H-104	70 to 75	0.03	0.29	9.7:1	5.0	0.7	7.1:1
H-119	50 to 55	0.235	1.40	6:1	5.0	0.6	8.3:1
H-156	55 to 60	0.06	0.78	13:1	5.0	0.9	5.6:1
H-157	30 to 35	0.02	0.145	7.3:1	5.0	0.8	6.3:1
H-159	15 to 20	0.01	0.62	62.0:1	5.0	0.6	8.3:1
H-168	25 to 30	0.03	1.1	36.7:1	5.0	0.9	5.6:1
H-178	15 to 20	0.09	0.76	8.4:1	5.0	0.9	5.6:1

Theoratically, the ratio of uranium content by radiometric measurement, eU_3O_8, to the corresponding chemical analyses, U_3O_8 should be inversely as the ratio of the width of the ore, as determined by hole probing, is to the width of the sample taken for chemical analyses. The erratic values in the foregoing table do not bear this out.

Chemical analyses of cuttings apparently do give slight indications of a content of ore in the sample but nothing more. Examination of the tables indicates that a chemical analysis of 0.02 percent U_3O_8 in a sample covering a 5-foot interval may be taken as evidence of the presence of ore which may be either rather low in grade, or have very little thickness. A content 0.03 percent U_3O_8 or more may show the presence of medium to high grade ore, knowing in advance that the ore deposits are likely to be narrow and of good grade. However, no great

reliance can be placed on such results because it is always possible that the uranium comes from a greater width of very low grade material. A chemical analysis of 0.01 percent U_3O_8 or even more must be viewed with caution because there is always a possibility of contamination in such low grade samples.

Representative samples of cuttings have value in non-core drilling projects as they provide a record of the physical composition of the formations and furnish some information, even though very scanty, in cases where drill holes might cave before they can be probed. In most cases the cutting samples could be discarded later without having any chemical analyses made.

It is obvious that cutting samples would have more value if a shorter sample interval were used and a new sample started at each change of formation. Examination of the cuttings should include radiometric testing and visual inspection for clues to the probable uranium, and vanadium content, in areas where vanadium minerals occur.

The job of taking frequent samples properly, and guarding against any sample contamination, keeping a close watch on the cutting stream at the same time, requires constant supervision which is seldom realized in the field. For this reason the best insurance against the possibility of overlooking significant mineralization would appear to be probing, to be done as soon as possible after the holes are drilled. All the information available from non-core drill holes is not obtained without probing. It is not necessary to employ elaborate probing equipment. The results obtained by the operator on this project compare very favorably with results of Geological Survey probing.

RECOMMENDATIONS

It is recommended that a Certification of Discovery be made as a result of the exploration project under DMEA 3355.

A suggested description of the discovery to be used in the Certification follows:

> Rotary non-core dry drilling from surface on the Shamrock group of claims in secs. 14, 15, 22 and 23, T. 48 N., R. 18 W., New Mexico principal meridian, further described in contract Idm-E703, DMEA 3355, Montrose County, Colorado, has partly delimited an inferred ore reserve of 428 tons of ore with a calculated average content of 0.44 percent uranium oxide and an undetermined amount of vanadium oxide, and with an average thickness of 0.63 feet, together with eight other indeterminate occurrences of uranium-vanadium ore around drill holes which penetrated but did not delimit ore deposits.

No recommendations for any further Government assisted exploration are made. Additional work which might be done would be in the nature of development underground or by more drilling from the surface to explore and extend known ore deposits. Exploration of other areas should await the results of mining operations on known deposits to see if they can be mined profitably.

/cm

TABLE I

List of Mineralized Holes with Comparison of Chemical Determinations of Cuttings and Radiometric Results of Probing Certain Holes

Hole No.	Location coordinates E	Location coordinates N	Depth of sample below collar in feet	Chemical analysis of cuttings V_2O_5 percents	Chemical analysis of cuttings U_3O_8 percents	Probing by operator depth in feet	Probing by operator eU_3O_8** percent	Probing by USGS depth in feet	Probing by USGS eU_3O_8 percent
H-38								37.2-38.2	0.014
								38.2-39.1	0.005
								39.1-40.3	0.005
								41.1-41.6	0.005
H-39	9600	9300	37-38	0.04	0.00	36-39	0.05	36.4-37.3	0.035
						48-49	0.05		
H-50			25-30	0.03	0.00			26.2-27.4	0.014
H-61	9700	9600	50-55	0.26	0.06	53-54	0.18	53.5-54.0	0.13
								54.0-54.7	0.26
H-64	9400	9600				45-46	0.20	43.4-44.1	0.17
H-66			45-50	0.01	0.01			45.4-45.8	0.01
H-69			30-35	0.12	0.00				*
H-71			36-37	0.05	0.02			30.1-31.5	0.01
								34.2-35.1	0.03
H-73	9600	9400	35-40	0.03	0.00	35-38	±0.02		*
			40-45	0.00	0.02				
H-78	8400	9600	55-60	0.01	0.01				
			60-65	0.00	0.01				
			65-70	0.00	0.00				
			70-75	0.01	0.01	69-72	slight count	69.5-70.5	0.01
H-81	8400	9500	60-65	0.00	0.01	52-58	±0.02	63.8-64.5	0.021
			65-70	0.00	0.00			66.2-68.2	0.011
H-82	8500	9500	52-53	0.66	0.06	51.5-53.5	0.15	51.2-51.9	0.16
H-84	8400	9400	40-45	0.00	0.01	53-54(?)	±0.02	43.4-44.2	0.03
H-94	8700	9000	40-45	Tr.	0.03	44-45	0.08		*
H-104	8700	8900	70-75	0.03	0.03	70.4-70.8	0.35	70.0-70.7	0.29
H-119	8700	8600	50-55	2.23	0.26	53-54	0.20	53.6-54.2	1.40
			50-55	2.27	0.21	54-55	1.00		
H-153	8400	8200	47-51	0.42	0.13	49-50	0.80		
			51-52	0.02	0.04				
			50-55	0.01	0.02			54.2-54.8	0.64
H-154	8300	8200	35-40	0.06	0.01	37-43	±0.10	35.1-36.7	0.036
			40-45	0.15	0.03			38.9-39.6	0.13
			50-55	0.02	0.01			39.6-40.2	0.024
								40.2-41.5	0.056
								52.8-54.9	0.01
H-155	8200	8200	30-35	0.03	0.01			35.4-35.3	0.005
			35-40	0.02	0.01			36.8-37.9	0.005
			40-45	0.02	Tr.			41.0-42.2	0.005
			45-50	0.01	Tr.			43.0-43.8	0.013
			50-55	0.07	0.01	53-56	±0.01	44.5-45.1	0.010
								46.3-48.3	0.005
								51.2-52.6	0.015
								58.2-59.4	0.005

TABLE I (continued)

Hole No.	Location coordinates E	Location coordinates N	Depth of sample below collar in feet	Chemical analysis of cuttings V_2O_5 percents	Chemical analysis of cuttings U_3O_8 percents	Probing by operator depth in feet	Probing by operator eU_3O_8** percent	Probing by USGS depth in feet	Probing by USGS eU_3O_8 percent
H-156	8100	8200	55-60	0.08	0.06	58-59	0.20		
						59-60	0.80	56.6-57.5	0.78
						60-61	0.20		
H-157	8100	8100	30-35	0.01	0.02	32-38	±0.09	32.2-33.0	0.145
H-158	8200	8100	25-30	0.03	0.00				
			30-35	0.03	0.00	30-40	±0.05	25.8-27.0	0.005
			35-40	0.01	0.01			28.5-29.9	0.005
			45-50	Tr.	0.01			34.1-34.8	0.016
								36.7-38.4	0.01
								48.5-49.3	0.01
								51.9-53.3	0.005
H-159	8300	8100	15-20	0.01	0.01	19-20	0.50	19.4-20.0	0.62
			40-45	0.05	0.00			41.4-42.1	0.013
H-162	8600	8100	35-40	0.01	0.00	37-38	±0.02	32.5-33.6	0.01
			40-45	0.01	0.00			35.8-37.0	0.013
H-168	8200	7900	25-30	0.04	0.03	27-28	0.10		
						28-29	0.20		
			30-35	0.10	0.03	29-30	1.10	29.2-30.1	1.1
						30-31	0.15		
H-169	8300	7900	15-20	0.01	0.00			17.3-29.4	0.005 (Ave.)
			20-25	0.03	0.00				
			25-30	0.03	0.07	24-28	0.04		
H-171	8500	7900	20-25	0.02	0.01	18-22	±0.01	20.2-20.9	0.041
H-176	8200	7700	20-25	0.02	0.02	19-24	±0.02	20.6-21.8	0.072
H-178	8400	7700	15-20	0.67	0.09	17-18	0.20	17.3-18.2	0.76
						18-19	0.80		
						19-20	0.10		
	9400	9500				46.5-47.5	0.10		*
	9500	9300				40-50	±0.01		*

* These holes were probed by the Geological Survey, but not reported to the operator because the results were negative. All but 6 holes were probed by the Geological Survey, and none of the 6 showed any mineralization when probed by the operator.

** Approximate values obtained with Model 600-B Babbel counter and hand-operated probe.

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

224 New Customhouse
Denver 2, Colorado

April 12, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 3355 (Uranium), Contract Idm-E703, Lowell A. Griffith and Associates, Montrose County, Colorado

Enclosed are the following final reports pertaining to work completed under the subject contract:

1. Original and one copy of the operator's final report.

2. Original and three copies of the final geologic report by the U.S. Geological Survey.

3. Original and three copies of the final engineering report by the U.S. Bureau of Mines.

Final payment to the operator was processed by this office April 6, 1955, im conformance with the Report of Review by the Contract Administration and Audit Division dated April 5, 1955.

The exploration work consisted of 12,350 feet of rotary drilling and analysis of 50 samples at a total accepted cost of $16,305.00 in which the Government participated to the extent of 75% or an amount of $12,228.75.

The exploration work resulted in the discovery or development of a substantial reserve of uranium ore, on which recommendations relative to the issuance of a certification of discovery or development were forwarded to the Washington office, DMEA, by memorandum of April 11, 1955.

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

OPORS, F. Rpt

PAUL H. KEATING
MINING ENGINEER

Mining Resources Branch
Date Rec'd
DEC 23
BUREAU OF MINES
Denver, Colorado

DIST. ENGR. WMT
EXAMINATION
DIST. CLERK
PERSONNEL
FILES 5703

Golden, Colo., 12/23/54.

APR 14 1955

Wm. Traver,
U.S. Bureau of Mines,
Federal Center,
Denver, Colo.

Dear Mr. Traver:

Herewith are five copies of my "final report" on the Griffith property, near Uravan, under DMEA Docket No. 3355, Contract No. Idm-E703.

One item is short, to wit: A USGS map of the Red Canyon Quadrangle. I discovered, only yesterday, that this map is "out-of-stock" at the Map Distribution office.

My typed report indicates that this particular map is enclosed in the "pocket" --- but it isn't, because the printing has been exhausted. However, this omission will not seriously affect the report.

Allow me to take this opportunity to say "Thank you Sir", for the fine co-operation that you and your boy Salxbury, and the girls in your outer office have given me in this (and other) operations. I think your Denver Agency is best described as a CCC camp - Courtesy, Competence, and Co-operation. (If I felt otherwise, be sure I would be brutally frank and critical to an equal degree).

Sincerely,

Paul H. Keating

Send for covering memo from O.C. to copy

Mineral Resources Branch

Date Rec'd
DEC 2 1 1954
BUREAU OF MINES
Denver, Colorado

DIST. EM
EXAM
FILES
E703

FINAL REPORT

To: THE DEFENSE MINERALS EXPLORATION ADMINISTRATION, 224 New Customs House, Denver 2, Colorado

From: Lowell A. Griffith Associates, Uravan, Montrose County, Colorado

Under: DMEA Docket #3355; Contract IDM-E703 (Uranium)

By: Paul H. Keating
P. O. Box 163
Golden, Colorado

Date: December 24, 1954

DEPARTMENT OF THE INTERIOR
Bureau of Mines Minerals Administration
RECEIVED
APR 14 1955

CONTENTS

Section

i General information re the area, and Statistical review of the operation

ii Costs of a "Short Form" contract - estimated, and actual.

iii "Discovery of Mineralization"

iv Maps, Charts, logs, probing, data, assays, production records and other pertinent information: Most of these data are included in the envelope-pocket, clipped to the inside back cover of this binder.

STATISTICAL REVIEW

GENERAL INFORMATION

This report concerns a certain area in western Montrose County, Colorado, known as "Carpenter Flats". Interest in this area lies in its potential content of Uranium- (and Vanadium-) bearing ores of the "carnotite" type of mineral. The area lies mostly within Sections 14 and 15 of Township 48 North, Range 15 West, N. M. P. M.

(In the pocket hereof is a U. S. Geological Survey Map of the "Red Canyon Quadrangle, upon which is marked the area concerned).

The specific group of claims concerned herein are owned, as unpatented ground, by Keith and Donald Andrews, of Nucla, Colorado. These claims are held under lease, by Lowell A. Griffith Associates, on a renewable basis, at a 15% (fifteen percent) royalty on gross production, to the Andrews interests.

The title to these claims is clear. Most (but not all) of the area has been "certified" by the Atomic Energy Commission for the "bonus" of $3.50 per lb. for Uranium Oxide production, up to 10,000 lbs. At this writing, (early December 1954), about 3500 lbs. of Uranium Oxide production is still available for this bonus payment (gross value about $12,250.00).

In September, 1954, the DMEA awarded to Lowell A. Griffith Associates, Contract Idm-E703, for a drilling-exploration program on

six of the claims held under lease. Pertinent general information on this over-all picture follows:---

SUMMARY OF BACKGROUND

No. of clear-title claims in a contiguous group, held under lease or owned		16
Net acreage of above group	(about)	300 A.
Acreage that has been explored under DMEA Contract assistance	(about)	30 A.
Claims explored under DMEA contract (mostly fractional areas)		6
No. of exploration holes drilled (40' to 130' deep)		164
Total footage drilled		12,567 Ft.

Drill Summary:

Drilling contractor, "Scott Bros., Lubbock, Texas"

Method: Rotary air drill, Mayhew, 4-1/4" hole.

Cost per ft. for drilling, $.90 per logged ft.

Drilling pattern: 100-ft. checkerboard centers.

Estimate vs. experience on footage in holes drilled: 97.6%.

Findings:

Totally blank holes	132	80%
Mineralized holes	32	20%
Showing "trace" to 0.10% U_3O_8	12	
"Ore", 0.10 to 0.20%	3	
"High Grade", (over 0.20% U_3O_8	6	

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 14 1955

FINDINGS, SAMPLING, ASSAYS

AREAS OR "PROVINCES" OF MINERALIZATION

The following areas showed cuttings or probing indications of commercial interest:

Co-ordinates

9400E-9600N & Southeasterly

8500E-9500N & Westerly

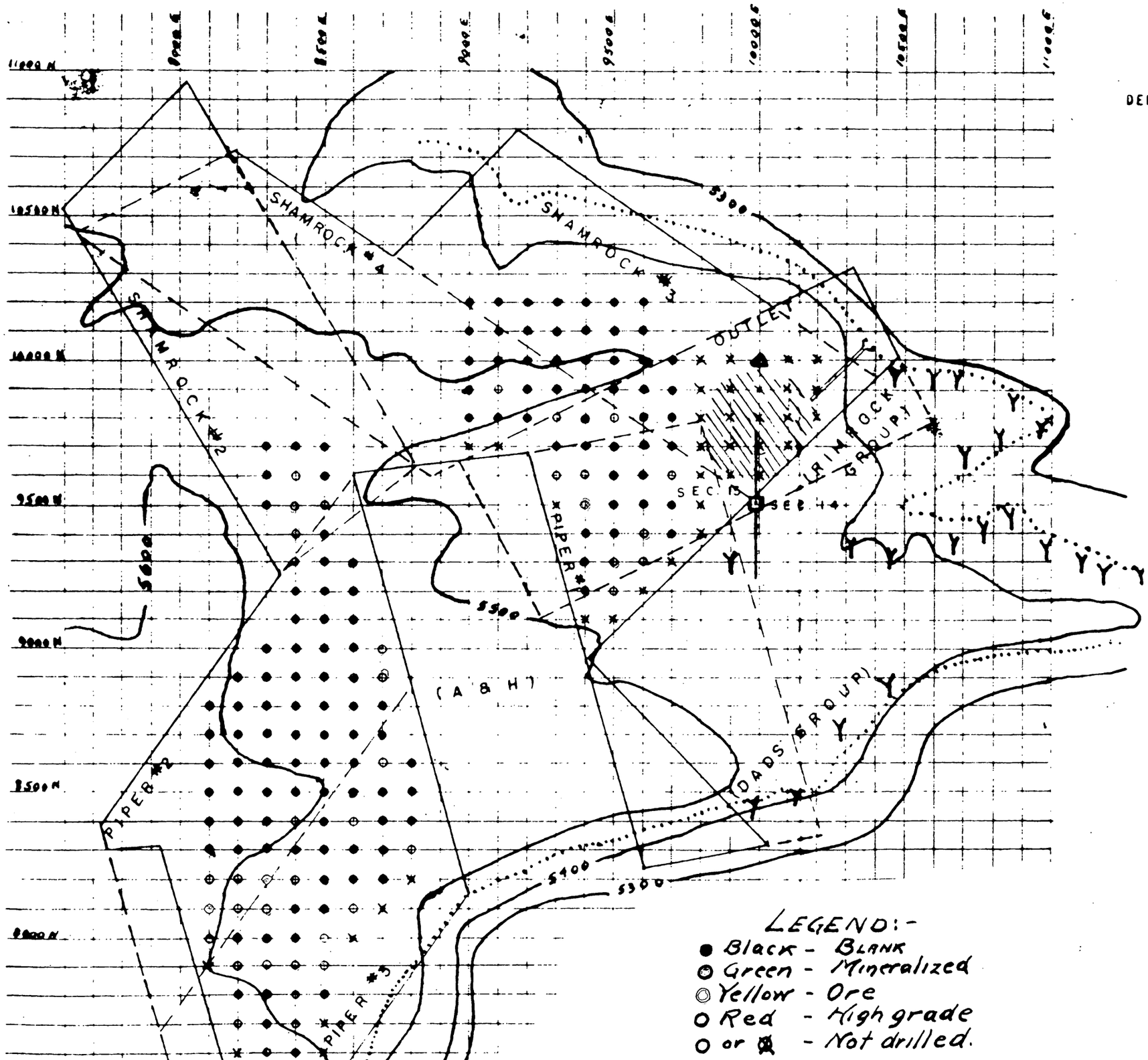
8100 to 8400 E &

7700 to 8200 N

Full information on the above "provinces" is given on the enclosed and attached maps and data sheets. These data may be assembled into a huge assortment of more or less valid conclusions.

ALL WE ACTUALLY KNOW IS THIS: That, at such-and-such a depth, in such-and-such a hole, the drill brought up cuttings that assayed a certain percent of Uranium and Vanadium; AND that a Babell-counter probe of the Contractee, and/or the findings of the Barnaby-counter of the U. S. G. S., made certain recordings; AND that the 50 samples submitted to the Minerals Assay Laboratory showed certain chemical results of the cuttings.

THESE DATA ARE ALL SUBMITTED HEREWITH, in addition to the logs of the holes, and production records from the property, (which production is NOT a result of the DMEA contract).



U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3355

EXPLANATION

- APPROXIMATE BASE OF LOWEST SALT WASH SANDSTONE LENS
- ○ LOCATION OF WAGON-DRILL HOLE PROPOSED BY APPLICANTS AND APPROVED BY EXAMINING FIELD TEAM
- × LOCATION OF WAGON-DRILL HOLE PROPOSED BY APPLICANTS AND REJECTED BY EXAMINING FIELD TEAM
- Y PROSPECT OR MINE
- ADIT AND UNDERGROUND DRIFT
- △ U. S. GEOLOGICAL SURVEY TRIANGULATION POINT ARBITRARILY CHOSEN AS 10,000 FEET N., AND 10,000 FEET E., AS A REFERENCE POINT FOR THE LOCATION OF PROPOSED WAGON-DRILL HOLES
- APPROXIMATE AREA OF GROUND PREVIOUSLY DRILLED
- APPROXIMATE LOCATION OF ¼ LAND SECTION CORNER
- BOUNDARY OF GROUND LEASED BY APPLICANTS AND NOT IN CONFLICT WITH PREVIOUS CLAIMS. CLAIMS BELONGING OR LEASED TO PARTIES OTHER THAN THE APPLICANTS ARE LABELED IN PARENTHESES

BY R. L. BOARDMAN (COMPILED FROM MAPS SUBMITTED BY APPLICANTS AND FROM DATA OBTAINED FROM FIELD EXAMINATION)

Figure 2. PLAN OF LOWELL A. GRIFFITH ASSOCIATES CLAIMS SHOWING APPROXIMATE LOCATION OF ~~PROPOSED~~ COMPLETED AND APPROVED WAGON-DRILL HOLES, SECTIONS 14 AND 15, T. 48 N., R. 18 W., N.M.P.M.

With so many variables in such a program, in which the data can be statistically "slanted", the undersigned makes no pretense to assemble it to the heart's desire, for any principal or agent.

As far as physically possible, this report contains photographic reproductions of the original records.

IN PARTICULAR:

Your attention is called to the "Barnaby-counter" data-sheet, and the assay tabulation of chemical content from the Minerals Assay Laboratory:

The drillers -- the mechanics actually drilling the holes, numbered the holes "H-49", "H-89", "H-119", etc., in a numerical sequence of their drill sets.

As these drillers took samples, according to a rigorous pattern demanded by the Contractee (and supervised by the resident engineer of Lowell A. Griffith Associates) -- they put about 15 lbs. of cuttings into a heavy paper bag, from each sampled interval. On the bag was written the Hole No., and the depth-interval from which the sample was taken. The "Hole No." was written as the drillers' symbol, on each sample recovered, such as "H-88", etc.

ENCLOSED HEREWITH (on the following page) is, A TRANSLATION OF THESE "HOLE NOS." TO CO-ORDINATES IN TERMS OF EAST AND NORTH, on the co-ordinate system covering the property.

On a preceding page of this report is a reproduction of a sheet of data from the USGS, which is "Barnaby counter" recordings. (A "Barnaby counter" is a glorified Geiger counter which approximates, within economic limits, the assay values of U_3O_8 exposed in the drill holes into which this probing device is lowered to near-bottom, and then slowly retracted).

The recordings were made by the USGS crew in terms of "Hole No. H-XYZ", rather than on the co-ordinates of the hole's position in the drilling pattern.

IT IS THE PURPOSE OF THE FOLLOWING TABLES to translate "Hole No. H-XYZ" in to co-ordinates on the drill-pattern map, and to translate colored (mineralized) co-ordinated holes on the map to the findings of the Barnaby Counter.

Table I

Hole Nos. to Co-rdinates

Hole No.	Co-ordinates East	Co-ordinates North
H-39	9600	9300
H-61	9700	9600
H-78	8400	9600
H-81	8400	9500
H-82	8500	9500
H-84	8400	9400
H-104	8700	8900
H-119	8700	8600
H-153	8400	8200
H-154	8300	8200
H-155	8200	8200
H-156	8100	8200
H-157	8100	8100
H-158	8200	8100
H-159	8300	8700
H-162	8600	8100
H-168	8200	7900
H-169	8300	7900
H-171	8500	7900
H-176	8200	7700
H-178	8400	7700

Table II

Co-ordinates to Hole Nos.

Co-ordinates East	Co-ordinates North	Hole No.
8100	8100	H-157
8100	8200	H-156
8200	7700	H-176
8200	7900	H-168
8200	8100	H-158
8200	8200	H-155
8300	7900	H-169
8300	8100	H-159
8300	8200	H-154
8400	7700	H-178
8400	8200	H-153
8400	9400	H- 84
8400	9500	H- 81
8400	9600	H- 78
8500	7900	H-171
8500	9500	H- 82
8600	8100	H-162
8700	8600	H-119
8700	8900	H-104
9600	9300	H- 39
9700	9600	H- 61

Holes not yet probed by USGS Barnaby Counter:
H-40; H-136; H-167; H-170; H-173; and H-181.

The foregoing translations of Hole Nos. to co-ordinates, and of co-ordinates to Hole Nos., is based upon data supplied by the resident engineer, one W. B. Griffith, who was present during the entire drilling-exploration program of this contract.

--

#1861 - #1875 Inclusive;

DATE 12/15/54

MINERALS ASSAY LABORATORY

549 NOLAND AVENUE GRAND JUNCTION, COLORADO PHONE 1441

NAME Griffith Uranium Company ADDRESS Bx. #163; Golden, Colorado

Report sent to Prof. Paul Keating;

SAMPLE	PERCENT URANIUM	PERCENT VANADIUM
12/14/54. H-39; 37-38	0.00	0.04
12/14/54 H-50; 25-30	0.00	0.03
12/14/54. H-61; 50-55	0.06	0.26
12/14/54 H-69; 30-35	0.00	0.12
12/14/54 H-73; 35-40	0.00	0.03
12/14/54 H-73; 40-45	0.02	0.00
12/14/54. H-78 55-60	0.01	0.01
12/14/54 H-78; 60-65	0.01	0.00
12/14/54 H-78; 65-70	0.00	0.00
12/14/54 H-78; 70-75	0.01	0.01
12/14/54. H-81; 60-65	0.01	*****
Correction----------		0.00
12/14/54 H-66; 45-50	0.01	0.01
12/14/54 H-71; 36-37	0.02	0.05
12/14/54. H-81; 65-70	0.00	0.00
12/14/54. H-82; 52-53	0.06	0.66
12/14/54. H-84 40-45	0.01	0.00
12/14/54 H-94 40-45	0.03	Trace
12/14/54. H-104 70-75	0.03	0.03
12/14/54. H-119 50-55	0.26	2.23
12/14/54 H-119 50-55	0.21	2.27
12/14/54. H-153 47-51	0.13	0.42
12/14/54 H-153 51-52	0.04	0.02
12/14/54 H-153 50-55	0.02	0.01
12/14/54. H-154 40-45	0.03	0.15
12/14/54 H-154 35-40	0.01	0.06
12/14/54 H-154 50-55	0.01	0.02
12/14/54. H-155 30-35	0.01	0.03
12/14/54 H-155 35-40	0.01	0.02
12/14/54 H-155 35-40	Trace	0.02
12/14/54 H-155 45-50	Trace	0.01
12/14/54 H-155 50-55	0.01	0.07
12/14/54. H-156 55-60	0.06	0.08
12/14/54. H-157 30-35	0.02	0.01
12/14/54. H-158 25-30	0.00	0.03
12/14/54 H-158 30-35	0.00	0.03
12/14/54 H-158 35-40	0.00	0.01
12/14/54 H-158 45-50	0.01	Trace
12/14/54 H-158 50-55	0.00	0.07
12/14/54. H-159 15-20	0.01	0.01
12/14/54 H-159 40-45	0.00	0.05
12/14/54. H-162 35-40	0.00	0.01
12/14/54 H-162 40-45	0000	0.01
12/14/54. H-168 25-30	0.03	0.04
12/14/54 H-168 30-35	0.03	0.10
12/14/54. H-169 15-20	0.00	0.01
12/14/54 H-169 20-25	0.00	0.03
12/14/54 H-169 25-30	0.07	0.03
12/14/54. H-171 20-25	0.01	0.02
12/14/54. H-176 0002 20-25	0.02	0.02
12/14/54. H-178 15-20	0.09	0.67

Total Charges $

Continued

MINERALS ASSAY LABORATORY

Phone 1441 549 Noland Ave.

Grand Junction, Colo.

Customer's Order No. #1861-#1875 incl. Date 12-14 1954

M. Griffith U. Co. % Prof. Keating

Address Bx. 163 Golden, Colo.

SOLD BY	CASH	C. O. D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
			✓			

QUAN.	DESCRIPTION	PRICE	AMOUNT
50	Samples		
50	U_3O_8	3.50	$175 00
50	V_2O_5	1.50	75 00
			250 00
	check #112, 12/18/54		
	Less 10%		25 00
			225 00

ALL claims and returned goods MUST be accompanied by this bill

807 Rec'd by Charlotte

MOORE DEALER - RICHARDSON OFFICE SUPPLY CO.

R. E. Morris

This page of translation of Drillers' numbers into terms of horizontal position on the general areal map, ALSO APPLIES TO THE PHOTOSTATIC REPRODUCTION OF THE ASSAYS received from the Minerals Assay Laboratory of Grand Junction.

SAMPLING It seems to your reporter, that one of the most difficult aspects of an exploration program of this type is in the matter of keeping accurate logs, and taking accurate samples.

On the current procedures, a drilling contract for exploration is let to a "professional driller", or drilling company, at, say, 90¢ per ft. of hole.

The drilling contractor is interested in "making hole" at 90¢ a foot, --- and if the hole "audits" his reported depth, he gets his money. There his interest ends.

But the Contractee is concerned with "WHAT COMES OUT OF THAT HOLE"! HE is trying to buy INFORMATION!

It is virtually impossible to get a drilling crew, two men who can and will work in deafening noise, suffocating dust, and under incredibly primitive living conditions, --- who, at the same time are deeply concerned about 12-inches of blue mudstone, 69.5 ft. to 70.5 ft. down hole.

Under this current contract, the Contractee has complied with every instruction, to the letter and spirit of the conditions set forth. HOWEVER:---

Logging, in general, and Sampling in particular, are somewhat less than satisfactory, under the methods in use at this time.

For example: It is perfectly possible, (and has been done), to drill through a foot of GOOD ORE, without even knowing it. Waste rock lay above this streak; and waste rock lay below it. The streak itself was drilled through, and the cuttings were blown into the 5-ft.-interval of "sample" taking.

These cuttings went into a common hopper, (e.g. a Duclone), and, when the "sample" was split and assayed, it showed 0.04% U_3O_8. The Duclone sampler COLLECTED THE CUTTINGS OF THIS 5-FT. interval. BUT IT COULD NOT REVEAL TO THE DRILLER THE FACT THAT HE WAS DRILLING THROUGH "ORE" OVER THAT 12" thickness!

The fact that an assay, over this 5-ft. interval, (assaying 0.04% U_3O_8), showed the Contractee that there was "something" in that interval, but nothing definite. It might be uniform throughout the 5 ft.; it might be 3" of 20.0% ore; it might be 2 ft. of 0.10% ore, --- in each case, the 5-ft.-interval sample of cuttings would show the same result, of 0.04 U_3O_8.

******

SUMMARY AND CONCLUSIONS

On the gate fold map bound herewith are shown the mineralized holes, in suitable colors. Logs of all holes are in the pocket, along with probing data.

On the following bound pages are Barnaby Counter results, a preliminary accounting of expenditures for monies received from the DMEA to date, and various other data.

The Contractee does not make an estimate herein of the tonnage "discovered". However there are enough "provinces" of mineralization developed on the drilling pattern to convince us that commercially important ore bodies lie in the ground prospected. In any group of adjacent mineralized holes, it is likely that there will be barren areas between them; and it is equally likely that there will also be areas of concentration.

***

Lowell A. Griffith Associates, and myself in particular wish to express our appreciation to the DMEA, the U.S. Bureau of Mines, the U.S. Geological Survey, and the other Federal agencies that have made this exploration possible.

This final report is, in part, an effort to furnish the above agencies with as complete a picture as possible of an entire operation, in one self-contained volume.

Respectfully yours,

LOWELL A. GRIFFITH ASSOCIATES

By Paul H. Keating
Paul H. Keating,
(Attorney in fact).

Golden, Colo.
Dec. 23, 1954

GAMMA-RAY LOG INTERPRETATION
USGS DARNABY PROBE RESULTS

ORE AND MINERALIZED HOLES ONLY
(Incomplete Report)

L. A. Griffith Associates
DMA Docket 3355
Carpenter Flats

Hole No.	Total Depth of Hole	Depth logged From	To	Anomaly Detected From	To	Counts per minute	Grade %U3O8
✓ H-139	54.0	49.1	418	19.4	20.0	8400	0.62
				41.1	42.1	500	0.013
H-104	96.0	91.9	3.9	70.0	70.7	5400	0.29
				88.7	88.5	360	0.01
✓ H-78	80.0	72.2	4.4	69.0	70.5	400	0.01
H-157	60.0	56.8	4.3	32.2	33.0	3600	0.145
H-81	74.0	72.9	4.4	62.4	63.6	720	0.019
				63.8	64.5	620	0.021
				66.2	66.2	520	0.011
H-84	78.0	76.7	4.2	43.4	44.2	820	0.03
✓ H-82	76.0	74.8	4.6	51.2	51.9	3500	0.16
H-38	57.9	57.9	4.1	37.2	38.2	540	0.014
				38.2	39.1	540	0.005
				39.1	40.3	230	0.005
				41.1	41.6	200	0.005
H-39	65.0	62.9	5.1	36.4	37.3	1420	0.035
H-156	50.0	85.7	3.2	56.6	57.5	23000	0.78
✓ H-178	40.0	34.9	4.8	17.3	18.2	22000	0.76
✓ H-168	45.0	42.7	4.3	29.2	30.1	32000	1.1
✓ H-155	70.0	68.8	4.2	34.4	35.3	240	0.005
H-				36.8	37.9	200	0.005
				41.0	42.2	260	0.005
				43.0	43.6	460	0.013
				44.5	45.1	380	0.010
				46.3	48.3	240	0.005
				51.2	52.6	440	0.015
				58.2	59.4	340	0.005
✓ H-171	40.0	35.2	3.9	20.2	27.9	1400	0.041
✓ H-169	49.0	45.4	4.9	17.3	29.4	320 (av. count)	0.005
✓ H-158	60.0	56.1	3.9	25.0	27.0	250	0.005
				28.5	29.9	290	0.005
				34.1	34.8	530	0.016
				36.7	38.4	300	0.01
				48.5	49.3	250	0.01
				51.9	53.3	210	0.005
H-66	54.0	45.3	4.0	45.4	45.0	300	0.01
H-64	55.0	44.1	5.0	43.4	44.1	3800	0.17
H-71	60.0	51.6	3.8	30.1	31.5	460	0.01
				34.2	35.1	860	0.03
✓ H-61	60.0	55.0	3.5	53.5	54.0	2400	0.13
				54.0	54.7	5000	0.26
✓ H-102	50.0	44.7	5.0	32.5	32.6	330	0.011
				35.8	37.0	540	0.013
				39.1	39.9	280	0.005
				41.6	44.7	300	0.005
H-176	45.0	42.5	4.3	20.6	21.8	2600	0.072
H-50	120.0	119.8	6.2	26.2	27.4	480	0.014
✓ H-154	60.0	57.0	3.1	35.1	36.7	1600	0.036
				36.9	38.5	3000	0.13
				39.6	40.2	600	0.024
				40.2	41.5	2200	0.056
				52.8	54.0	500 (saltedit)	0.01

COPY

GAMMA RAY LOG INTERPRETATION
USGS DAMAGE ZONE WELLS

ONE ARM MINERALIZED HOLES ONLY
(Incomplete report)

L. J. Griffith Associates
DMSA Docket 3355
Carpenter Flats

Hole No.	Total depth of hole	Depth Logged From	Depth Logged To	Anomaly Detected From	Anomaly Detected To	Counts per minute	Grade %U_3O_8
H-153	60.0	60.6	3.8	54.2	54.8	14000	0.64
H-119	70.0	68.4	4.6	53.4	54.2	27000	1.20

Department of Energy
Defense Minerals Administration
RECEIVED
APR 14 1950

PAUL H. KEATING
MINING ENGINEER

Golden, Colo., Dec. 2, 1954.

LOWELL A. GRIFFITH ASSOCIATES,

Report to the "Associates" on receipts and disbursements of money received and spent on DMEA Docket #3355, Contract Idm-E703, for exploration of Carpenter Flats area, Montrose Co., Colo.

RECEIPTS: (To date, above).

Govt. check, deposited U.S. Nat. Bank 11/1/54	2134.27	
Govt. check, deposited U.S. Nat. Bank 11/25/54	6233.17	
Total, U.S. Govt. checks		$8367.44

DISBURSEMENTS:

Check No. & date:	Payee & Purpose	
#101 11/1/54	Scott Bros., Drilling for Sept., 1954, on acct.	1750.00
#102 11/1/54	Jerome Craig, bulldozing drill sets, and access roads, on acct.	250.00
#103 11/1/54	Lou Scher, drafting, compilations (office work) on October report.	15.00
#104 11/2/54	Riley's Reproductions; printing of tables, maps, reports for Oct. '54	46.69
#105 11/8/54	Prospectors Supply Co. 2500 metal-eared envelopes for samples, 3½x5"	35.13
#106 11/25/54	Scott Bros., Drilling, on acct.	5000.00
#107 11/25/54	Jerome Craig; bulldozing, on acct.	350.00
#108 11/27/54	Lou Scher. Drafting, map-coloring, comp'l'g, errand-time for prints, on acct.	20.00
#109 12/1/54	Riley's Reproductions: Maps, logs, tabulations; prepatory material for final rep't.	99.13
#110 12/2/54	Jerome Craig. Balance of work done for DMEA contract, per agreement of W. B. Griffith; additional work to be (or has been) paid from "other sources".	30.00

TOTALS: Amt. received	$8367.44	
Amts. Paid Out		$7595.95
Balance on hand in U.S. Nat. Bank)		771.49
	$8367.44	$8367.44

THIS IS AN INTERIM STATEMENT ONLY
AND DOES NOT PRESENT FINAL ACCOUNTING.

Paul H Keating
Paul H. Keating

COSTS

Costs are simple arithmetic, with which there is no compromise. Following are the essential totals, broken down into tabular form, on this Contract Idm-E703:---

Contract allowances:

	DMEA	Contractee	Total
Holes approved			171
Footage			13500
Rate: $1.30/ft.		$17,550.00	
160 chem. assays @ $5 ea. (amended)		800.00	
Total			$18,350.00
Govt. participation 75%	13,762.50		
Contractee participation 25%		4,587.50	
Total			$18,350.00

Contract experience:

Holes actually drilled	164
Footage, actually drilled on this contract	12,567 ft.
Chemical assays of U_3O_8 & V_2O_5 (results herewith)	50

Expenditures:	Drilling at 90¢/ft.	$11,310.30
	Res. engr. & helper, for 2 months, (labor).	1,600.00
	Sample bags & envelopes (2500 ea. @ 2¢ ea.)	100.00
	Chemical assays	250.00
	Drafting, printing, stenographic help, stationery, (over)	500.00
	Total	13,760.30

****

The above figures were not pulled out of a hat. Data for most of the foregoing is submitted herewith; the balance can be furnished, if it will add anything to the information desired or needed. The major premise is that this is an exploration and mining operation rather than a book-keeper's paradise. "Contingencies" and other items have been omitted, although they add at least one-third of the personal, personnel, and the "associates" expense to the above total of "Expenditures".

LIST OF CLAIMS

Claim Name	Date Filed	Book-Page	Claimant
*Piper #1	Mar. 30, 1953	349 - 567	K.M & D.K. Andrews
*Piper #2	"	349 - 567	"
*Piper #3	"	349 - 568	"
Shamrock #1	Apr. 13 1950	343 - 8	"
*Shamrock #2	"	343 - 9	"
*Shamrock #3	"	343 - 10	"
*Shamrock #4	"	343 - 11	"
Shamrock #5	Apr. 19 1950	343 - 21	"
Kingpin #1	Mar. 19, 1951	343 - 379	"
Kingpin #2	"	343 - 380	"
Kingpin #3	"	343 - 381	"
Kingpin #4	"	343 - 382	"
Kingpin #5	"	343 - 383	"
Kingpin #6	"	343 - 384	"
Kingpin #7	"	343 - 385	"
Kingpin #8	"	343 - 386	"
Lollypop	Apr. 15, 1954		"
Piperoo	"		"
Outlet	"		

* Claims so marked have been explored under DMEA Contract Idm-E703.

TABULATION OF ESTIMATED DRILLING DEPTHS

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
8100	7900	70	X	Piper #3	29' T.R, 49' TR.
8100	8000	70	52	Piper #2	
8100	8100	76	60	" "	
8100	8200	86	90	" "	
8100	8300	100	121	" "	
8100	8400	115	108	" "	
8100	8500	114	100	" "	
8100	8600	115	100	" "	
8100	8700	113	83	" "	
8100	8800	110	85	" "	
8200	7600	80	X	Piper #3	
8200	7700	70	45	" "	
8200	7800	60	59	" "	
8200	7900	60	45	" "	
8200	8000	64	52	" "	
8200	8100	63	60	Piper #2	
8200	8200	73	70	" "	
8200	8300	83	90	" "	
8200	8400	103	108	" "	
8200	8500	105	108	" "	
8200	8600	110	79	" "	
8200	8700	108	79	" "	
8200	8800	106	84	" "	
8200	8900	110	96	" "	
8300	7400	50	X	Piper #3	
8300	7500	78	58	" "	
8300	7600	80	47	" "	
8300	7700	66	40	" "	
8300	7800	55	48	" "	
8300	7900	55	48	" "	
8300	8000	56	52	" "	
8300	8100	56	54	" "	
8300	8200	62	60	" "	
8300	8300	78	80	Piper #2	
8300	8400	101	120	" "	
8300	8500	108	95	" "	
8300	8600	110	75	" "	
8300	8700	105	80	" "	
8300	8800	100	94	" "	
8300	8900	103	93	" "	
8300	9000	101	91	" "	

8300	9500	80	80	Shamrock#8	
8300	9600	106	106	" "	
8300	9700	108	130	" "	

(Cont., next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual	Piper #3	
				"	
8400	7400	40	X	Piper #3	
8400	7500	60	60	"	
8400	7600	63	47	"	
8400	7700	58	40	"	
8400	7800	50	42	"	
8400	7900	47	42	"	
8400	8000	45	46	"	
8400	8100	47	60	"	
8400	8200	56	60	"	
8400	8300	73	75	"	
8400	8400	90		Piper #2	
8400	8500	102	93	"	
8400	8600	104	70	"	
8400	8700	102	75	"	
8400	8800	76	85	"	
8400	8900	77	87	"	
8400	9000	70	89	"	
8400	9100	80	80	"	
8400	9200	78	83	"	
8400	9300	78		Shamrock #2	
8400	9400	78	78	" #2	
8400	9500	79	74	" #2	
8400	9600	103	80	" #2	
8400	9700	110	104	" #2	
8500	7600	50	X	Piper #3	
8500	7700	50	X	"	
8500	7800	45	40	"	
8500	7900	40	40	"	
8500	8000	38		"	
8500	8100	38	53	"	
8500	8200	50	55	"	
8500	8300	68	60	"	
8500	8400	82	75	"	
8500	8500	94	88	Piper #2	
8500	8600	102	70	"	
8500	8700	98	68	"	
8500	8800	95	88	"	
8500	8900	86	90	"	
8500	9000	79	78	"	
8500	9100	77	70	"	
8500	9200	78	80	"	
8500	9300	78	70	"	
8500	9400	79	76	"	

(Cont. next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
8500	9500	98	76	Shamrock #2	
8500	9600	9500	67	"	
8500	9700	96	115	"	
8600	8000	36	X	Piper #3	
8600	8100	38	50	"	
8600	8200	45	60	"	
8600	8300	60	60	"	
8600	8400	80	87	"	
8600	8500	93	76	"	
8600	8600	102	68	"	
8600	8700	87	60	Piper #2	
8600	8800	90	86	"	
8600	8900	83	90	"	
8600	9000	78	76	"	
8600	9100	78	65	"	
8600	9200	80	80	"	
8600	9300	80	66	"	
8700	8100	36	X	Piper #3	
8700	8200	39	55	"	
8700	8300	50	60	"	
8700	8400	70	71	"	
8700	8500	87	75	"	
8700	8600	93	70	"	
8700	8700	92	60	"	
8700	8800	88	88	Piper #2	
8700	8900	82	95	"	
8700	9000	79	67	"	
8800	8200	37	X	Piper #3	
8800	8300	40		"	
8800	8400	63	71	"	
8800	8500	83	85	"	
8800	8600	88	75	"	

[redacted] [redacted]

TABULATION OF ESTIMATED DRILLING DEPTHS

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
9000	9700	80	X	Shamrock #4	
9000	9800	95	120	"	
9000	9900	105	120	"	
9000	10000	100	94	"	
9000	10100	79	80	"	
9000	10200	60	65	Shamrock #3	
9100	9700	75	X	Outlet	
9100	9800	95	120	Shamrock #4	
9100	9900	105		"	
9100	10000	102	94	"	
9100	10100	80	80	"	
9100	10200	65	65	Shamrock $3	
9200	9800	90	120	Shamrock #4	
9200	9900	103	120	"	
9200	10000	102	100	"	
9200	10100	82	85	Shamrock #3	
9200	10200	70	70	"	
9300	9500	58	X	Piper #1	
9300	9600	60		"	
9300	9700	70	60	"	
9300	9800	80		Outlet	
9300	9900	102	120	Shamrock #4	
9300	10000	103	100	Shamrock #3	
9300	10100	85	78	"	
9300	102000	70	60	"	
9400	9100	60	X	Piper #1	
9400	9200	58	50	"	
9400	9300	59	65	"	
9400	9400	59	60	"	
9400	9500	57	53	"	
9400	9600	59	55	"	
9400	9700	64	60	[illegible]	
9400	9800	75	75	Outlet	
9400	9900	88	120	Shamrock #4	
9400	10000	102	108	Shamrock #3	
9400	10100	98	98	"	
9400	10200	76	78	"	

(Continued, next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
9500	9100	58	X	Piper #1	
9500	9200	55	50	"	
9500	9300	55	60	"	
9500	9400	55	60	"	
9500	9500	54	54	"	
9500	9600	58	50	"	
9500	9700	67	60	"	
9500	9800	72		Outlet	INACCESSIBLE
9500	9900	93	118	Shamrock #3	
9500	10000	102	105	"	
9500	10100	98	95	"	
9500	10200	68	68	"	
9600	9200	55	X	Piper #1	
9600	9300	55	65	"	
9600	9400	50	60	"	
9600	9500	50	50	"	
9600	9600	56	60	"	
9600	9700	62	65	"	
9600	9800	78	117	Shamrock #3	
9600	9900	102	117	"	
9600	10000	105	100	"	
9600	10100	90	90	"	
9600	10200	60	60	"	
9700	9300	50	X	Piper #1	
9700	9400	50	60	"	
9700	9500	47	48	"	
9700	9600	54	75	"	
9700	9700	60	77	"	
9700	9800	90	120	Shamrock #3	
9700	9900	102	100	"	
9700	10000	102	100	"	
9800	9400	45	X	Piper #1	
9800	9500	44	X	"	
9800	9600	50	X	"	
9800	9700	61	120	"	
9800	9800	90	X	Shamrock #3	
9800	9900	103	X	"	
9800	10000	103	X	"	

(Continued next page)

TABULATION OF ESTIMATED DRILLING DEPTHS (Cont.).

CO-ORDINATES		DEPTHS		CLAIM	Remarks
East	North	Est.	Actual		
9900	9600	55	X	Shamrock #3	
9900	9700	66	X	"	
9900	9800	80	X	"	
9900	9900	101	X	"	
9900	10000	105	X		
10000	9600	60	X	Shamrock #3	
10000	9700	67	X	"	
10000	9800	75	X	"	
10000	9900	80	X	"	
10100	9700	58	X	Shamrock #3	
10100	9800	59	X	"	
10100	9900	70	X	"	
10100	10000	80	X	"	
10200	9800	40	X	Shamrock #3	
10200	9900	60	X	"	
10200	10000	63	X	"	

Total: 16,000 ft.

[redacted]

The above co-ordinates refer to a certain "Triangulation Point", established by the U.S.G.S., about 500' northerly from the East ¼ Cor. of Sec. 15, Twp. 48N, R. 18W, N.M.P.M., in western Montrose Co., Colorado. This "point" is a capped and labeled iron pipe, set in sandstone at the high point of a ridge in the area concerned. It is marked on the maps accompanying this report.

This Triangulation Point has been arbitrarily chosen as a reference point in this survey and report. Its assumed co-ordinates are 10,000' North, and 10,000' East.

It is uniformly indicated on the attached folio of maps by an equilateral triangle "△".

GRIFFITH URANIUM COMPANY
SHAMROCK #3

Date	Lot No.	Mill #	Mill	Wet	Dry	U308	Value	V205	Value	Total	Haul	Total	Per Ton at Mine	
5/25/54	1	5633	Uravan	2.970	2.824	0.50	125.68	2.80	49.03	174.71	5.35	180.06	61.86	6
5/28/54	2	5658	"	7.800	7.532	0.16	78.98	1.48	68.97	147.95	5.62	153.57	19.64	2
6/5/54	3	5679	"	3.26	3.214	0.19	46.40	1.58	31.49	77.89	2.35	80.24	24.23	4
9/3/54	4	5808	"	4.86	4.714	0.88	388.96	3.89	113.70	502.66	8.75	511.41	106.63	1
9/22/54	5	5842	"	10.84	10.245	1.29	1,260.79	5.04	320.32	1,581.11	19.51	1,600.62	154.32	9
9/5/54	6	5852	"	6.06	5.593	0.55	276.92	2.69	93.29	370.21	10.91	381.12	66.19	2
9/28/54	7	Lot #43907	Naturita	4.72	4.465	0.46	181.74	2.47	68.51	250.25	7.08	257.33	56.04	7
11/12/54	8	5914	Uravan	11.31	10.802	0.61	595.56	2.37	158.54	754.10	20.36	774.46	69.69	5
					49.389					3,858.88			Av. 78.13	

LEASERS—KAREN & MOORE PIPER TRIANGLE

11/12/54	8A	5915	Uravan	8.93	8.673	0.21	145.14	2.35	126.49	271.63	6.43	278.06	31.31	9
11/15/54	9A	44320 & 446	Naturita	19.685	18.721	0.25	388.49	2.31	268.46	656.95	29.53	686.48	35.09	1
					27.394					928.58			33.89	

[illegible]

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

Defense Minerals Exp. Adm.
APR 13 1955

224 New Customhouse
Denver 2, Colorado

April 11, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - DMEA Docket 3355, Contract Idm-E703, Lowell A. Griffith Associates - Colorado

Enclosed is settlement sheet covering Lot No. 6095 on ore shipped by Lowell A. Griffith Associates to United States Vanadium Company.

Also enclosed is United States Vanadium Company check No. 503 in the amount of $63.69 in payment of royalty due on this shipment.

W. M. TRAVER

W. M. Traver

Enclosures

[illegible]

Copy to: Sec. [illegible] Comm. ( ) w/settlement sheet
J. P. Shaw w/settlement sheet
Royalty File E703
Chron

.1

D STATES VANADIUM COMPANY
n Carbide and Carbon Corporation

TLEMENT

DMEA Date Rec'd MAR 1955 BUREAU

Receiving Station Uravan, Colorado — Colorado March 18 1955
Liquidation No. 6095 — Lot No. — ail — Shippers Lot No.
Bought of Griffith Uranium Co — A.E.C. License No. 770
Address Uravan
Type of Ore Carnotite — ate Received 3-1-55 Dec'd 3-15-55
Mining Claim Piper #1 — Mining District Faraday — r Flats — Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
				Approx. Average					
	62320	3.5	60126.76	0.32	2.19		191.40	1316.16	

PRICED PER A.E.C. CIRCULAR NO. 5 (Revised)

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U308 Payment	191.40	3.50	30.06		669.90	
Development Allowance	191.40	.50	30.06		95.70	
Excess 4 lbs. per ton Premium	71.16	.75	30.06		53.37	
Excess 10 lbs. per ton Premium						
Total U308 Payment						818.97
V205 Payment	1316.16	.31	30.06		408.01	
Total V205 Payment						408.01
Less High Line Penalty over 6% CaCo3						
Base Penalty						
——%———%=——% Penalty @ $ .04 per 1/10th						
TOTAL						
Haulage Allowance 12 Miles 31.16 Wet Tons @ 1.50 per wet ton ~~mile~~						46.74
Total U3O8, V2O5 and Haulage Payment						1273.72

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 15 1955

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

APR 14 1955

224 New Customhouse
Denver 2, Colorado

April 11, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3355 (Uranium), Contract Idm-E703, L. A. Griffith Associates, Montrose County, Colorado.

Enclosed are the original and three copies of memorandum report dated March 30, 1955 from M. H. Salsbury, Mining Engineer, U. S. Bureau of Mines, recommending the issuance of a certification of discovery or development as a result of the exploration work performed under the subject contract.

The basis for the certification of discovery is as follows:

Exploration by diamond drilling on the property described in Article 2 of the contract has resulted in the development of a substantial reserve of uranium ore.

W. M. Traver

W. M. Traver

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DMEA
Date Rec'd
MAR 31 1955
BUREAU OF MINES
Denver, Colorado

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
March 30, 1955

DEPARTMENT OF THE INTERIOR
Bureau of Mineral Administration
RECEIVED
APR 14 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: M. H. Salsbury

Subject: DMEA 3355, Contract Idm-E703, (Uranium), L. A. Griffith Associates, Shamrock group of claims, Montrose County, Colorado - Recommendation for Certification of Discovery

Operations under the subject contract in 1954 have resulted in a discovery of uranium-vanadium ore in the Shamrock group of claims, sec. 14, 15, 22, and 23, T. 48 N., R. 18 W., New Mexico principal meridian, Montrose County, Colorado. The discovery consists of nine areas shown in the figure accompanying this memorandum, in which rotary non-core dry drilling has penetrated a thin bed of uranium-vanadium ore. In one deposit on the Piper No. 2 and No. 3 claims, it has been feasible to delimit from drilling results an inferred reserve of 428 tons of ore with a calculated average thickness of 0.63 feet, an average content of 0.44 percent U_3O_8, and an undetermined content of V_2O_5. The grade or amount of ore in eight other areas could not be estimated on the basis of exploration results.

Government assisted exploration approved for payment consisted of 12,350 feet of rotary non-core dry drilling and 50 chemical analyses for U_3O_8 and V_2O_5 at an approved cost of $16,305.00. Government participation at 75 percent is $12,228.75.

Certification of Discovery or Development is recommended on the basis of ore discoveries made during the course of exploration under DMEA 3355.

M. H. Salsbury
M. H. Salsbury
Mining Engineer

cc 7
Idm-E703
Chron

MHS/cm

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

224 New Customhouse
Denver 2, Colorado

March 3, 1955

Mr. Paul H. Keating, Authorized Agent
Lowell A. Griffith Associates
P. O. Box 153
Golden, Colorado

Re: Royalty payments, DMEA Docket 3355 (Uranium), Contract Idm-E703, Lowell A. Griffith Associates, Shamrock Group of Claims, Montrose County, Colorado

Dear Mr. Keating:

According to the terms of DMEA Contract Idm-E703, royalty payments are due the U. S. Government on all shipments of ore from the claims listed in Annex I to the contract from the date of the contract, September 9, 1954. Royalty is therefore due on all shipments made subsequent to the above date from the Piper claims Nos. 1, 2, and 3, the Shamrock claims Nos. 2, 3, and 4, and from the Outlet claim.

Our records indicate that several shipments of uranium ore have been made under DMEA Contract Idm-E703 for which we have not as yet received royalty payments.

Please furnish this office with four copies of all applicable settlement sheets and your check for royalties due. Royalties are to be calculated as per Section 10 of the enclosed copy of DMEA Order 1 Amended. Future settlement sheets and royalty payments can best be handled by authorizing the mill where ore is shipped to withhold DMEA royalties and to transmit them direct to this office.

Your letter should be addressed to the Executive Officer, DMEA Field Team, Region III, Room 224 New Customhouse, Denver 2, Colorado. All checks are to be made payable to the Defense Minerals Exploration Administration.

Yours very truly,
W. M. TRAVER,

W. M. Traver
Executive Officer
DMEA Field Team, Region III

Enclosure

Copy to: Lowell A. Griffith
P. O. Box 675
Central City, Colo.

RDB:ld
Copy to: Royalty File E703
Sec. Opr. Comm. (2)
T. A. Christensen
J. F. Shaw
R. D. Berkenkotter
Chron.

December 1, 1954

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare and Misc. Metals Division

Subject: Amendment to contract

Mr. Ellis reviewed and approved Amendment No. 1, dated November 24, 1954, to Contract No. Idm-E703, Docket No. DMEA-3355, Lowell A. Griffith Associates (Uranium).

/s/ Grace L. Ault

Grace L. Ault

Date 11/29/54

To: Mr. Ellis (Region IV delegated application)

Docket No. DMEA-3355 (Uranium) Lowell A. Griffith Associates
Contract No. Idm-E703

Attached is Amendment No. 1, dated Nov. 24, 1954

to be reviewed.

Approved _____

Other action _____

Please return this slip to me for my records.

Mrs. Ault

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

224 New Customhouse
Denver 2, Colorado

November 24, 1954

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3355 (Uranium), Contract Idm-E703, Lowell A. Griffith Associates, Montrose County, Colorado

Enclosed are the original and two copies of Amendment No. 1 to Contract Idm-E703 which has been executed to establish a unit cost for assaying so that the recitation in Exhibit "A" will be consistent with the provisions of Article 4 of the contract form.

Copies of the amendment have been given to the Operator, to the Finance Office, Region IV, and a copy retained for our files.

W. H. King

Enclosures

RECEIVED
DEC 3 1954
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

224 New Customhouse
Denver 2, Colorado

November 18, 1954

Memorandum

To: Chairman, Operating Committee

From: Executive Officer, DMEA Field Team, Reg. IV

Subject: Docket DMEA-3355 (Uranium), Lowell A. Griffith Associates, Montrose County, Colorado, Contract No. Idm-E703

Reference is made to your letter dated November 1, 1954, requesting information regarding legal documents pertaining to this contract. We have copies of the following documents in our file:

A Lease dated February 1954, between Keith M. Andrews and Donald K. Andrews, lessors, and Construction Specialties Company and L. A. Griffith, Trustee. This lease covers the Shamrock Nos. 2, 3,and 4, and the Piper Nos. 1, 2, and 3 claims.

A copy of an agreement which grants L. A. Griffith, Trustee, permission to assign to the Construction Specialties Company, one-half interest in the lease.

A memorandum of agreement whereby L. A. Griffith, Trustee, sells an undivided one-half interest in the lease to Construction Specialties Company.

A Location Certificate on the Outlet Mining claim in the name of L. A. Griffith, Trustee, Construction Specialties Company, and W. B. Griffith.

A Quit Claim Deed on the Outlet Mining Claim under which William B. Griffith and Lowell A. Griffith, Trustee, quit claim all right, title and interest in the Outlet Mining Claim to Paul H. Keating.

W. B. Griffith and William B. Griffith are one and the same person. L. A. Griffith and Lowell A. Griffith are one and the same person.

Further reference is now made to the points brought out in your letter:

1. The operator has title to the Piper Nos. 1, 2, and 3 claims by virtue of the lease dated February 1, 1954 mentioned above. The agreement granted L. A. Griffith, Trustee, permission to assign one-half interest to the Construction Specialties Company and the Memorandum of Agreement covered this transaction.

2. Construction Specialties Company is the Lessee of all 5 Shamrock Claims, only 3 of which are the subject of the project.

3. The Outlet Mining Claim is owned by Lowell A. Griffith Associates, by virtue of the Location Certificate and Quit Claim Deed.

All of these documents have been examined by John W. Shireman, our Attorney. His approval is indicated by the initials, "JWS" which appears on all copies of the contract near the signature of the Executive Officer.

We thank you for bringing this to our attention because it is quite possible that we could overlook something in such a complicated chain of title.

Very truly yours,

John F. Shaw

John F. Shaw, for
W. H. King
Executive Officer
DMEA Field Team, Reg. IV

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

224 New Customhouse
Denver 2, Colorado

November 18, 1954

Mr. Paul H. Keating
Attorney in Fact
Lowell A. Griffith Associates
P. O. Box 163
Golden, Colorado

Re: Docket DMEA 3355 (Uranium)
Contract Idm-E703

Dear Mr. Keating:

Enclosed are the original and five copies of Amendment No. 1 to Contract Idm-E703, which has been prepared to establish a unit cost for assaying to effect consistency between the recitation in Exhibit A and the provisions of Article 4 of the contract form, which stipulates that the work will be performed at an agreed unit cost.

All copies of the amendment should be signed by you and returned to this office, leaving the date blank.

Upon signature by the Executive Officer, DMEA Field Team, Region IV, for the Government, your copy of the amendment will be forwarded to you.

Yours very truly,

J. F. Shaw

J. F. Shaw for
W. H. King
Executive Officer
DMEA Field Team, Region IV

Enclosures

JaTill

Copy to: [illegible], [illegible] Corp.(2)
A. Koechmann
[illegible]raver
J. Townsend

and
[illegible]

DMEA Docket copy
Surname:
Rubin
Hofflund
Ellis

140

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

1st page rewritten

Rubin
Hofflund
Ellis
Selfridge
Fehrenbacher
Whitenday

NOV 1 - 1954

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA-3355 (Uranium)
Lowell A. Griffith Associates
Montrose County, Colorado
Contract No. Idm-E703

Dear Mr. King:

We have reviewed the subject contract executed by you.

The contract recites that the Operator is a partnership consisting of two individuals and a company, the Construction Specialties Co., apparently a corporation. We shall assume for purposes of this letter that the company is a corporation authorized to enter into a partnership.

Article 2 of the contract sets forth that the Operator is a lessee of a group of claims described as three "Piper" claims, three "Shamrock" claims, and the "Outlet" claim.

Our docket contains a copy of a "Memorandum of Agreement" dated January 25, 1954, executed by Keith and Donald Andrews which refers to L. A. Griffith, Trustee, as lessee, under one lease, of five Shamrock claims and eight Kingpin claims, and lessee, under another lease, of three Piper claims. That agreement recites that the leases are attached to it but they are not attached to our copy, and the engineering report prepared by M. H. Salsbury, transmitted to the Operating Committee with your letter dated September 9, 1954, recites that a copy of the "original lease" was not furnished to the Government.

The "Memorandum of Agreement" recites further that L. A. Griffith, Trustee, is granted permission to assign to Construction Specialties Co. an undivided one-half interest in five Shamrock claims and eight Kingpin claims. No mention is made of the three Piper claims which are contained in the contract, and no copy of assignment is in our docket.

R.C.G.

There is a statement in Mr. Boardman's report of June 24, 1954, that: "The Outlet claim belongs to Lowell A. Griffith; the other six claims * * * are leased to Lowell A. Griffith Associates."

The Owner's Consent to Lien covering three Piper and three Shamrock claims, executed by the Andrews, is attached. There is no Owner's Consent to Lien covering the Outlet claim.

As stated above, the memorandum agreement authorizes assignment of a one-half interest in one lease to one partner, the Construction Specialties Co., and not to the partnership. These being the only facts which we have at hand concerning the Operator's land holdings, the interest of the partnership-operator should be verified and the statements in the contract form concerning them corrected by amendments,-- the points involved being as follows:

1. The Operator does not appear to hold any interest in the Piper claims.

2. One of the partners (Construction Specialties Co.) may be a holder of an undivided one-half interest in five Shamrock claims, three of which are the subject of the project, if the assignment was executed by L. A. Griffith, Trustee.

3. What is the interest of the partnership or any partner in the Outlet claim?

Copies of the leases and of the assignment should be furnished to the Government, if you have not yet been furnished with them.

The property questions should be clarified and the contract amended where necessary before any payments are made.

CRubin/emd 10/22/54
Copy to: DMEA Docket
Solicitor's Docket
Adm. R. File
Operating Committee
T. H. Kiilsgaard, USGS
J. E. Crawford, USBM

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Approved:

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

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

H Ellis (2) J.L. Hofflund HCRubin chron. pending

140

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

Ontin
Hoffland
Ellis

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA-3355 (Uranium)
Lowell A. Griffith Associates
Montrose County, Colorado
Contract No. Idm-E703

Dear Mr. King:

We have reviewed the subject contract executed by you.

The contract recites that the Operator is a partnership consisting of two individuals and a company, the Construction Specialties Co., apparently a corporation. We shall assume for purposes of this letter that the company is a corporation authorized to enter into a partnership.

Article 2 of the contract sets forth that the Operator is a lessee of a group of claims described as three "Piper" claims, three "Shamrock" claims, and the "Outlet" claim.

Our docket contains a copy of a "Memorandum of Agreement" dated January 25, 1954, executed by Keith and Donald Andrews which refers to L. A. Griffith, Trustee, as lessee, under one lease, of five Shamrock claims and eight Kingpin claims, and lessee, under another lease, of three Piper claims. That agreement recites that the leases are attached to it but they are not attached to our copy, and the engineering report prepared by M. H. Salsbury dated September 17, 1954, recites that a copy of the "original lease" was not furnished to the Government.

The "Memorandum of Agreement" recites further that L. A. Griffith, Trustee, is granted permission to assign to Construction Specialties Co. an undivided one-half interest in five Shamrock claims and eight Kingpin claims. No mention is made of the three Piper claims which are contained in the contract, and no copy of assignment is in our docket.

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

October 29, 1954

Memorandum

To: Miss Curtin, Statistics and Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA

Subject: Region IV Contract

Attached is the docket copy of a Region IV contract which has been reviewed and approved by the Commodity Division and the Audit Division. A memorandum to the Field by Mr. Hofflund cleared the Committee today.

Lowell A. Griffith Associates, DMEA-3355, Idm-E703.

Attachment 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

Rubin

October 22, 1954

Memorandum

To: The Administrator, DMEA
Attention: Mr. E. W. Ellis

From: Acting Assistant Solicitor

Subject: Docket No. DMEA-3355, Lowell A. Griffith Associates, Contract Idm-E703 (Uranium)

As requested in memorandum dated October 20, from the Chief of the Rare and Miscellaneous Metals Division, we have prepared the attached letter for signature of the Chairman of the Operating Committee, concerning the subject contract drafted and executed in Region IV.

The proposed letter incorporates the comments in our memorandum dated October 19, on the same subject.

At the suggestion in the memorandum dated October 20 that "apparent corrections" in the memorandum dated October 19 may be required, our memorandum dated October 19 was reviewed and we believe that all comments therein require clarification from Region IV, and our proposed letter so provides.

J. L. Hofflund

J. L. Hofflund
Acting Assistant Solicitor

Attachment

HCRubin/emd
Copy to: DMEA Docket
Solicitor's docket
E. W. Ellis (2)
J. L. Hofflund
H. C. Rubin
chron.

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

INTERIOR DEPT.
OCT 21 1954
SOLICITOR

October 20, 1954

Memorandum

To: Acting Assistant Solicitor, DMEA

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Your memorandum dated October 19, 1954,
Re: Docket No. DMEA-3355, Lowell A. Griffith
Associates, Contract Idm-E703 (Uranium)

In accordance with my conversation with Mr. Rubin this date, I am returning above-mentioned memorandum and suggest an apparent correction in the memorandum. As brought out in our conversation, two copies of the memorandum should be referred to Region IV for their guidance, or a letter may be addressed to Region IV over the signatures of the Operating Committee.

The apparent discrepancy in the said memorandum is the reference to the Outlet claim. In R. L. Boardman's (USGS) report of June 14, 1954, page 2, is stated: "The Outlet claim belongs to Lowell A. Griffith; the other six claims included in the application belong to K. M. Andrews and D. K. Andrews of Nucla, Colo., and are leased to Lowell A. Griffith Associates." The contract contains an Owner's Consent to Lien on the latter six claims.

It would seem that the Outlet claim which is shown in Annex I of the contract, but was unrecorded as of the date of the contract (September 9, 1954), was located by Lowell A. Griffith to protect fractions of land and possibly for a tunnel site.

The Region IV records should show that the Outlet claim was assigned to the partnership and mention of the claim should be made under Article 2(a) of the contract.

Ernest Wm. Ellis

Ernest Wm. Ellis

EWEllis/gla
cc to: Docket
Code 700 contract file

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

October 19, 1954

Memorandum

To: The Administrator, DMEA

Attention: Mr. E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3355, Lowell A. Griffith Associates, Contract Idm-K703 (Uranium)

We have reviewed the subject contract executed by the Executive Officer, Region IV.

The contract recites that the Operator is a partnership consisting of two individuals and the Construction Specialties Co., apparently a corporation. We shall assume for the purposes of this memorandum that if the company is a corporation, it is authorized to enter into a partnership.

Article 2 of the contract sets forth that the Operator is a lessee of a group of claims described as three "Piper" claims, three "Shamrock" claims, and the "Outlet" claim.

The docket contains a copy of a "Memorandum of Agreement" dated January 25, 1954, executed by Keith and Donald Andrews which refers to L. A. Griffith, Trustee, as lessee, under one lease, of five Shamrock claims and eight Kingpin claims, and lessee, under another lease, of three Piper claims. The Outlet claim is not mentioned in the agreement. The agreement recites that the leases are attached to it but they are not attached to the copy in the docket, and the engineering report prepared by M. H. Salsbury ~~dated~~ received September 17, 1954, recites that a copy of the "original lease" was not furnished to the Government.

The "Memorandum of Agreement" recites further that L. A. Griffith, Trustee, is granted permission to assign to Construction Specialties Co. an undivided one-half interest in five Shamrock claims and eight Kingpin claims. No mention is made of the three Piper claims which are contained in the contract, or of the Outlet claim. No copy of this authorized assignment is in the docket.

The Owner's Consent to Lien covering three Piper and three Shamrock claims, executed by the Andrews, is attached. There is no Owner's Consent to Lien covering the Outlet claim.

If the foregoing facts are correct:

1. The Operator is not a lessee of any interest in the Piper claims.

2. One of the partners may be a holder of an undivided one-half interest in five Shamrock claims, three of which are the subject of the project, if the assignment was executed by L. A. Griffith, Trustee.

3. Neither the partnership nor any of the partners holds any interest in the Outlet claim.

4. The Owner's Consent to Lien covering the Outlet claim is required.

5. Copies of the leases and of the assignment should be furnished to the Government, if the Executive Officer of Region IV has not been furnished with them.

The property questions should be clarified and the contract amended where necessary before any payments are made.

/S/ Henry C. Rubin
for J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachment

HCRubin/emd
Copy to: DMEA Docket
Solicitor's Docket
E. W. Ellis (2)
J. L. Hofflund
H. C. Rubin
chron.

September 17, 1954

Memorandum

To: Hazell Perry, Operating Committee

From: Grace L. Ault, Rare & Misc. Metals Division

Subject: Docket No. DMEA-3355 (Uranium)
Contract No. Idm-8703
Lowell A. Griffith Associates
Montrose County, Colorado

Mr. Ellis has reviewed and approved the above contract executed by the Executive Officer, Region IV, and the Operator, dated September 9, 1954.

/s/ Grace L. Ault

Grace L. Ault

Date Sep 15, 1954

To: Mr. Ellis (for assignment to engineer)

Docket No. DMEA-3355 Lowell A. ~~Grier~~ Briffett Associates
Contract No. Idm-E703 - contract written by Region IV
Attached is Amendment No. _____, dated Sept. 9, 1954

to be reviewed.

Approved Ernest W. Ellis

Other action _____

Please return this slip to me for my records.

Mrs. Ault

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

224 New Customhouse
Denver 2, Colorado

October 7, 1954

Memorandum

To: Chairman, Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3355 (Uranium), Contract No. Idm-E703, Lowell A. Griffith Associates, the partnership consisting of Lowell A. Griffith, Construction Specialties Co., and Paul H. Keating, Montrose County, Colorado.

Enclosed for your records are the original and two copies of the Power of Attorney executed by Lowell A. Griffith and Construction Specialties Company in favor of Paul H. Keating to act as agent of the partnership in all matters relative to the administration of the contract.

W. H. King

W. H. King

Enclosures

Original

PAUL H. KEATING,

GOLDEN, COLO.

Sept. 19, 1957

CONSTRUCTION SPECIALTIES C

by W. E. Griffith, Pres

Accepted:-

Paul H Keating

P.O. Box 163

Golden, Colo.

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
SEP 13 1954

224 New Customhouse
Denver 2, Colorado

September 9, 1954

REGISTERED

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3355 (Uranium), Contract Idm-E703, Lowell A. Griffith Associates, Montrose County, Colorado

Enclosed are the original and two copies of Contract Idm-E703. Copies of the contract have been given to the operator, the Finance Office, Region IV, and a copy has been retained for our files.

W. H. King

Enclosures

RECEIVED
OCT 6 - 1954
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 13 1954

224 New Customhouse
Denver 2, Colorado

September 9, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3355 (Uranium), Contract Idm-E703, Lowell A. Griffith Associates, Montrose County, Colorado

Enclosed are four copies of the report of examination and two copies of Form B on the subject Docket.

A contract has been prepared and is in force.

W. H. King

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 13 1954

Mining Division
Region IV

August 25, 1954.

Memorandum

To: DMEA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3355 (Uranium), Lowell A. Griffith Associates (Shamrock Group), Montrose County, Colorado.

Enclosed are eleven copies of the engineering report of examination on the subject docket.

The applicant requested a total of $24,000.00 to wagon drill 210 holes with a total footage of 16,000 feet.

The engineer examiner concludes that a modified drilling program is warranted and recommends wagon drilling 171 holes with a maximum of 13,500 feet of hole on a 100 foot grid. The total estimated cost is $18,350.00.

We concur in this recommendation.

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
June 24, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3355 (Uranium) Lowell A. Griffith Associates (Shamrock Group) Montrose County, Colorado

Enclosed are the original and ten copies of the "Summary, Conclusions, and Recommendations," by R. L. Boardman, Geological Survey, and M. H. Salsbury, Bureau of Mines, and of M. H. Salsbury's engineering report on the above docket.

Salsbury concludes the area covered by the application has a reasonable possibility of containing small commercial ore deposits on the order of 500 to 600 tons in the Salt Wash formation. He recommends a revised project with wagon drilling 171 holes with a maximum of 13,500 feet of hole on a 100-foot grid. A short-form contract is suggested at $1.30 per foot of drilling totaling $17,550.00 and analyses of 200 samples for U_3O_8 and V_2O_5 at $4.00 each or $800.00 and making an over-all cost of $18,355.00--Government participation 75 percent, or $13,766.25.

I concur with his conclusions and recommendations.

The brochure forwarded with your memorandum of May 10, 1954, is also enclosed.

F. D. Everett

F. D. Everett for
W. M. Traver

enclosures

cc 10
DMEA 3355
DMEA Chron.

WMT/pam

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

IN REPLY REFER TO:

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
OF...

SEP 13 1954

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Bldg. 25
Denver Federal Center
Denver, Colorado

July 1, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3355, Lowell A. Griffith Associates, Mining Claims, Carpenter Flats, Montrose County, Colorado - report of examination.

Transmitted herewith are 11 copies of a geologic report by R. L. Boardman, U. S. Geological Survey, on the subject property.

The carnotite deposits in the immediate area of the property appear to be small (100 tons ±) but of good grade. Mr. Boardman recommends a program somewhat reduced from that proposed by the applicant; the proposed program is acceptable to the applicant.

Nine extra copies of the 2 figures in the geologic report are transmitted also.

E. H. Koschmann
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLO.

June 14, 1954

Memorandum

To: A. H. Koschmann, DMEA Field Team, Region IV

From: W. P. Williams, Colorado Plateau District

Subject: DMEA 3355, Lowell A. Griffith Associates, Mining Claims, Carpenter Flats, Montrose County, Colo.

Transmitted herewith are eleven copies of a geologic report on a DMEA field examination in the Uravan district. This report was prepared by R. L. Boardman of this office. We are also enclosing nine extra copies of the maps accompanying the report.

Mr. Boardman recommends that a contract be prepared allowing for exploration work on the subject claims. Mr. Boardman's proposed plan of exploration is somewhat modified and reduced from the applicants' original plan; however, Boardman's proposed drilling is acceptable to the applicants.

WPWilliams

W. P. Williams
Geologist

WPW/mlr

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3355

Shamrock Group

Lowell A. Griffith Associates

Montrose County, Colorado

Uranium

R. L. Boardman
Geological Survey

M. H. Salsbury
Bureau of Mines

June 24, 1954

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
OFFICE

SEP 13 1954

DMEA 3355

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By R. L. Boardman
Geologist
Geological Survey

M. H. Salsbury
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

DMEA 3355

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By R. L. Boardman and M. H. Salsbury

Lowell A. Griffith Associates, a partnership, L. A. Griffith, superintendent, Uravan, Colo., has applied for a Defense Minerals Exploration Administration loan of $24,000.00--Government participation 75 percent, or $18,000.00--to explore for uranium on the Shamrock Group of claims in the Carpenter Flats area of Montrose County, Colo. The proposal calls for 16,000 feet of drilling in 210 wagon drill holes averaging 76 feet each.

The claim locations have not been validated, and according to the Bureau of Land Management, there are no oil and gas leases outstanding on ground which would conflict with the area included in a revised exploration program recommended by the examining team. Another oil and gas lease, which is no longer in effect, might make validation of the claims advisable.

The proposed project would explore the lower or first rim of the Salt Wash member of the Morrison formation. While only a small part of Salt Wash production in the Uravan belt has come from this horizon, there have been some small ore bodies found and one ore body on a claim adjoining the Shamrock Group produced 202 tons of ore averaging 0.42 percent U_3O_8.

The principal rocks exposed on the property consist of interbedded sandstone and mudstone strata (40-120 feet thick) of the lower part of the Salt Wash member of the Jurassic Morrison formation. The upper 65-80 percent of the Salt Wash member has been eroded in this area. The base of the Salt Wash formation and the location of most known deposits are indicated on figure 2 with the geologic report. About 80-100 feet of predominantly red

shale and argillaceous sandstone of the Summerville formation underlie the Salt Wash. The formation apparently has no relationship to the known deposits in the area. The bottom 30-70 feet of the Salt Wash member, which is proposed for exploration forms a nearly vertical rim. Uranium-vanadium ore has been produced from several small deposits in a sandstone lens in the basal part of the formation. The deposits are characteristically high grade and associated with abundant carbonaceous material. The deposits appear to be mostly small rolls localized around logs; however, there was a strong suggestion of a roughly tabular mineralized mass in old workings on the Eclipse claim southeast of the Piper No. 3 claim.

The revised program employs the applicants' proposal, with the exception of holes located near the rim or property boundaries, or around holes already drilled which are now being investigated by underground exploration.

The present operation appears to be well managed and the applicants' superintendent is considered competent to supervise the recommended exploration.

There is a good possibility of finding small but commercial ore bodies by drilling, and a project calling for 13,500 feet of wagon drilling in 171 holes at an estimated cost of $18,355.00--Government participation 75 percent, or $13,766.25--is recommended.

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3355, Lowell A. Griffith Associates, Mining Claims, Carpenter Flats
Montrose County, Colorado

Uranium

By

R. L. Boardman, Geologist
U. S. Geological Survey

June 14, 1954

Reviewed by
DMEA OPERATING COMMITTEE
9-17-54
(date)

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ILLUSTRATIONS

Figure 1.	Index map of part of the Colorado Plateau showing the approximate location of Lowell A. Griffith Associates' mining claims, Carpenter Flats area, Montrose County, Colorado	2-A
Figure 2.	Plan of Lowell A. Griffith Associates claims, showing approximate location of proposed and approved wagon-drill holes, Secs. 14 and 15, T. 48 N., R. 18 W., NMPM	6-A

DMEA DOCKET 3355

CONCLUSIONS AND RECOMMENDATIONS

A DMEA uranium field examination was made of seven mining claims in the Carpenter Flats area, Montrose County, Colo. These claims (Shamrock No. 2, No. 3, and No. 4, Piper No. 1, No. 2, and No. 3, and Outlet) belong to K. M. Andrews and D. K. Andrews of Nucla, Colo., and are leased to the applicants, Lowell A. Griffith Associates, of Uravan, Colo.

The uranium deposits in the area examined are in the basal Salt Wash sandstone lens. The deposits are characteristically small, ranging from a few tons to possibly 100 or more. The deposits are closely associated with richly mineralized logs and abundant carbonaceous material.

The applicants propose 16,000 feet of wagon drilling in holes spaced 100 feet apart at an estimated cost of $24,000, to search for ore deposits at shallow and economic depths. It is recommended that 2,500 feet of the proposed drilling be deleted because some of the proposed drilling should more appropriately be considered development drilling rather than exploration drilling, and because a small amount of the proposed drilling is planned either too close to the rim or too close to the claim lines to be acceptable. The balance of the proposed exploration program, 13,500 feet of wagon drilling is believed to be well conceived and is expected to yield minable ore. This modified program is acceptable to the applicants. The cost of the modified program, calculated at $1.50 per foot, would be $20,250, of which the Government's share would be $15,187.50. It is recommended that a contract be prepared and approved.

INTRODUCTION AND SUMMARY

Lowell A. Griffith Associates of Uravan, Colo., have applied to the Defense Minerals Exploration Administration for a loan to explore for uranium on seven mining claims in the Carpenter Flats area, Montrose County, Colo. (fig. 1). The claims included in the application are the Shamrock No. 2, No. 3, and No. 4, Piper No. 1, No. 2, and No. 3, and the Outlet. The Outlet claim belongs to Lowell A. Griffith; the other six claims included in the application belong to K. M. Andrews and D. K. Andrews of Nucla, Colo., and are leased to Lowell A. Griffith Associates.

All seven claims were examined on May 18, 1954, by R. L. Boardman, geologist, U. S. Geological Survey, and M. H. Salsbury, engineer, U. S. Bureau of Mines, in company with Lowell A. Griffith, one of the applicants. The claims lie mostly in the E½ of sec. 15, T. 48 N., R. 18 W., New Mexico principal meridian. A small part of the ground is in the adjacent W½ of sec. 14. The claims are accessible by about 2.5 miles of new access road that crosses the Dolores River and joins Colorado Highway 141 about 9 miles northwest of Uravan. There is one very steep grade (23 percent) along the access road; however, trucks can probably reach the property in question in all but the most severe rain and snow weather.

The applicants propose 16,000 feet of wagon drilling to explore for uranium in the seven mining claims listed above. The total cost of the proposed exploration, including technical supervision, assaying, surveying, and other incidentals pertinent to the operation was estimated by the applicants to be $24,000 based on $1.50 per foot of drilling.

As a result of the field examination, it is believed that most of the exploration proposed by the applicants is warranted; it is recommended that 2,500 feet of the proposed 16,000 feet of wagon drilling be eliminated, and that the remaining 13,500 feet of wagon drilling be utilized as proposed by the applicants. Most of the footage eliminated was to be in holes proposed to test ground that is currently being explored by drifting and that has been explored by 10 holes drilled previously by individuals other than the claim owners and the applicants. Although no data are available on this previous drilling, the applicants probed the holes with a Geiger tube and found sufficient radioactivity in a few of the holes to justify drifting about 400 feet from the rim outcrop. The remainder of the footage to be eliminated is in holes proposed either too close to the rim or too close to the claim boundaries to be acceptable.

The total cost of the modified program is calculated to be $20,250, of which the Government's share would be $15,187.50. The modified program is acceptable to Lowell A. Griffith Associates and is expected to yield minable ore. It is recommended that a contract be prepared and approved.

It should be noted that the applicants' brochure is inadequate and unsatisfactory, in that no mention is made of (1) previous drilling, (2) current exploratory work, and (3) production, tonnage and grade of ore mined from claims in question, as well as from adjacent claims. These three omissions should have been described in detail in the brochure. In the interest of saving time, it was decided by the examining field team to recommend the exploration believed warranted without the prolonged delay that would be necessitated to have the applicants complete their brochure satisfactorily.

GEOLOGY

The principal rocks exposed in the Carpenter Flats area, included in this examination, consist of interbedded sandstone and mudstone strata (40-120 feet thick) of the lower part of the Salt Wash member of the Jurassic Morrison formation. The upper 65-80 per cent of the Salt Wash member has been eroded in the area examined. The base of the Salt Wash member is indicated on figure 2. About 80-100 feet of predominantly red shale and argillaceous sandstone of the Summerville formation underlies the Salt Wash, and separates the Salt Wash from the Entrada sandstone ("Slick Rim") also of Jurassic age. The Summerville and Entrada sediments have no apparent relationship to the known deposits in the Carpenter Flats area and are not considered in the proposed exploration program.

The bottom 30-70 feet of Salt Wash in the area examined is a persistent light-brown sandstone lens that forms a nearly vertical rim. In places, thin green and red mudstone layers are present in this sandstone. The mudstone underlying this sandstone lens is generally red although locally green mudstone 0.1-2.0 feet or more thick is common in contact with the sandstone. Carbonaceous material is abundant locally in this sandstone lens. Most of the surface in the area examined is on the top of this basal Salt Wash sandstone lens or on the overlying red mudstone beds. The known deposits in this part of the Carpenter Flats are in the basal Salt Wash sandstone lens, and all of the wagon drilling proposed by the applicant is planned to explore this lens for deposits. In some places in the ground examined a second Salt Wash sandstone lens is present and forms a bench surface. This lens is about 40-50 feet stratigraphically above the basal Salt Wash sandstone lens, and is relatively thin (15-25 feet thick). It is mostly red brown in color and is not considered a favorable host rock for minable uranium-vanadium deposits. The strata in this part of the Carpenter Flats area strike about N. 45° W. and dip about 4° NE toward the axis of the northwest-trending San Miguel syncline.

ORE DEPOSITS

Uranium-vanadium ore has been produced from several small deposits in the basal Salt Wash sandstone lens in the vicinity of the Shamrock, Piper, and Outlet claims. The approximate location of most of those deposits is shown on figure 2. The deposits are characteristically high grade and associated with abundant carbonaceous material. Richly mineralized logs are common and were mined recently in the drift in the Outlet and Shamrock No. 3 claims. One load of three tons of ore averaging 0.50 per cent U_3O_8 and 2.4 per cent V_2O_5 has been shipped from this drift. A smaller and lower grade second load has also been shipped. The objective of the drift is a deposit found by probing exploratory drill holes with a Geiger tube. The drift, at the time of the examination, was about 140 feet short of the deposit, and no data were available to appraise the size of the deposit.

The ore bodies in the vicinity of the Shamrock, Piper, and Outlet claims range from a few tons to possibly 100 or more tons. Mr. L. A. Griffith reported that the Mal Pais Mining and Engineering Company has mined approximately 40 per cent of its potential bonus ore (10,000 pounds of U_3O_8 total potential bonus) from the Dad claim that adjoins the Piper No. 1 claim to the east (see fig. 2). This production would probably represent about 400-600 tons of uranium-bearing ore. The Atomic Energy Commission's production records, however, show only about 30 tons of ore produced from the Dad claim.

The deposits observed in the area appear to be mostly small rolls localized around logs; however, there was a strong suggestion of a roughly tabular mineralized mass in the old workings on the Eclipse claim southeast of the Piper No. 3 claim.

The uranium and vanadium minerals observed are typical of those of the carnotite deposits of the Colorado Plateau. Secondary copper minerals are relatively abundant in the Carpenter Flats deposits.

CURRENT AND PROPOSED EXPLORATION

The Mal Pais Mining and Engineering Co., wagon drilled 10 holes in the southwestern part of the Shamrock No. 3 claim in the belief that the ground being tested was on one of the adjacent Rim Rock claims which they have leased from Andrews and Andrews. Lowell A. Griffith Associates probed these holes with a Geiger tube and found one hole to be strongly radioactive through an interval of two or more feet. Adjacent holes had weaker but anomalous high radioactivity. As a result, the applicants commenced drifting southwest from the rim on the Outlet claim (see fig. 2), toward the strongly mineralized hole, a distance of approximately 400 feet. At the time of the examination, the drift was about 253 feet long and had penetrated some ore (see above, "Ore Deposits"). Three ventilation holes, two intersected by the drift and one about 15 feet ahead of the face of the drift, have been drilled by the applicants. In addition, one exploratory hole was wagon-drilled by the applicants a few hundred feet west of the drift, but they were unable to probe the hole. At least two other exploratory wagon-drill holes were attempted in the vicinity of the drift, but they did not get down to the ore-bearing horizon because of mechanical difficulties.

That is the status of current and previous exploration in the claims leased by the applicants. It should be noted that the deposit being mined on the Dad's claim (see above "Ore Deposits") by the Mal Pais Mining and Engineering Co., was discovered by wagon drilling done by that company. Also, it should be noted that none of the production and exploration data given above were mentioned in the applicants' brochure.

The applicants have proposed 16,000 feet of wagon drilling at a cost of $24,000, in the seven claims included in their application. This drilling consists of 210 proposed drill holes planned on 100-foot centers. The applicants plan to explore only that ground where the ore-bearing zone is at relatively shallow depths (less than 120 feet). The applicants plan to probe all holes drilled with a Geiger tube. The objectives of the proposed exploration are "to find ore bodies at economical depths, and to mine them at an early date, at a royalty that will discharge the contract or obligation that made their discovery possible."

The writer believes that most of the proposed exploration is well conceived and has a good chance of realizing the objectives stated above. It is recommended that 39 holes totaling 2500 feet be deleted from the applicants' proposed exploration program as indicated on Figure 2 and tabulated in the "Appendix" of this report. Of these 39 holes, 23 are in the immediate vicinity of the applicants current development work and should be considered "development" drilling rather than "exploration" drilling; 7 are proposed too close to the rim, and 9 are proposed too close to the claim boundaries. The remaining 171 holes, totaling 13,500 feet of wagon drilling are believed justified. The cost of this work, based on $1.50 per foot of drilling, would be $20,250. The large number of deposits in the basal Salt Wash sandstone lens in the Carpenter Flats and adjacent areas constitutes the principal justification of the proposed exploration. Many of these deposits, though small, can be considered to be economic and minable, at the relatively shallow depths for which drilling is proposed.

APPENDIX

TABULATION OF ESTIMATED DRILLING DEPTHS

CO-ORDINATES		DEPTHS		CLAIM
East	North	Est.	Actual	
8100	7900	(70) *		Piper #3
8100	8000	70		Piper #2
8100	8100	76		" "
8100	8200	86		" "
8100	8300	100		" "
8100	8400	115		" "
8100	8500	114		" "
8100	8600	115		" "
8100	8700	113		" "
8100	8800	110		" "
8200	7600	(80)		Piper #3
8200	7700	70		" "
8200	7800	60		" "
8200	7900	60		" "
8200	8000	64		" "
8200	8100	63		Piper #2
8200	8200	73		" "
8200	8300	83		" "
8200	8400	103		" "
8200	8500	105		" "
8200	8600	110		" "
8200	8700	108		" "
8200	8800	106		" "
8200	8900	110		" "
8300	7400	(50)		Piper #3
8300	7500	78		" "
8300	7600	80		" "
8300	7700	66		" "
8300	7800	55		" "
8300	7900	55		" "
8300	8000	56		" "
8300	8100	56		" "
8300	8200	62		" "
8300	8300	78		Piper #2
8300	8400	101		" "
8300	8500	108		" "
8300	8600	110		" "
8300	8700	105		" "
8300	8800	100		" "
8300	8900	103		" "
8300	9000	101		" "

* Holes shown in parenthesis are to be deleted.

CO-ORDINATES		DEPTHS		CLAIM
East	North	Est.	Actual	
8300	9500	80		Shamrock #2
8300	9600	106		" "
8300	9700	108		" "
8400	7400	(40)		Piper #3
8400	7500	60		" "
8400	7600	63		" "
8400	7700	58		" "
8400	7800	50		" "
8400	7900	47		" "
8400	8000	45		" "
8400	8100	47		" "
8400	8200	56		" "
8400	8300	73		" "
8400	8400	90		Piper #2
8400	8500	102		" "
8400	8600	104		" "
8400	8700	102		" "
8400	8800	76		" "
8400	8900	77		" "
8400	9000	70		" "
8400	9100	80		" "
8400	9200	78		" "
8400	9300	78		Shamrock#2
8400	9400	78		" "
8400	9500	79		" "
8400	9600	103		" "
8400	9700	110		" "
8500	7600	(50)		Piper #3
8500	7700	(50)		" "
8500	7800	45		" "
8500	7900	40		" "
8500	8000	38		" "
8500	8100	38		" "
8500	8200	50		" "
8500	8300	68		" "
8500	8400	82		" "
8500	8500	94		Piper #2
8500	8600	102		" "
8500	8700	98		" "
8500	8800	95		" "
8500	8900	86		" "
8500	9000	79		" "

CO-ORDINATES		DEPTHS		CLAIM
East	North	Est.	Actual	
8500	9100	77		Piper #2
8500	9200	78		" "
8500	9300	78		" "
8500	9400	79		" "
8500	9500	98		Shamrock #2
8500	9600	95		" "
8500	9700	96		" "
8600	8000	(36)		Piper #3
8600	8100	38		" "
8600	8200	45		" "
8600	8300	60		" "
8600	8400	80		" "
8600	8500	93		" "
8600	8600	102		" "
8600	8700	87		Piper #2
8600	8800	90		" "
8600	8900	83		" "
8600	9000	78		" "
8600	9100	78		" "
8600	9200	80		" "
8600	9300	80		" "
8700	8100	(36)		Piper #3
8700	8200	39		" "
8700	8300	50		" "
8700	8400	70		" "
8700	8500	87		" "
8700	8600	93		" "
8700	8700	92		" "
8700	8800	88		Piper #2
8700	8900	82		" "
8700	9000	79		" "
8800	8200	(37)		Piper #3
8800	8300	40		" "
8800	8400	63		" "
8800	8500	83		" "
8800	8600	88		" "
9000	9700	(80)		Shamrock #4
9000	9800	95		" "
9000	9900	105		" "
9000	10000	100		" "
9000	10100	79		" "
9000	10200	60		Shamrock #3

CO-ORDINATES		DEPTHS		CLAIM
East	North	Est.	Actual	
9100	9700	(75)		Outlet
9100	9800	95		Shamrock #4
9100	9900	105		" "
9100	10000	102		" "
9100	10100	80		" "
9100	10200	65		Shamrock #3
9200	9800	90		Shamrock #4
9200	9900	103		" "
9200	10000	102		" "
9200	10100	82		Shamrock #3
9200	10200	70		" "
9300	9500	(58)		Piper #1
9300	9600	60		" "
9300	9700	70		" "
9300	9800	80		Outlet
9300	9900	102		Shamrock #4
9300	10000	103		Shamrock #3
9300	10100	85		" "
9300	10200	70		" "
9400	9100	(60)		Piper #1
9400	9200	58		" "
9400	9300	59		" "
9400	9400	59		" "
9400	9500	57		" "
9400	9600	59		" "
9400	9700	64		" "
9400	9800	75		Outlet
9400	9900	88		Shamrock #4
9400	10000	102		Shamrock #3
9400	10100	98		" "
9400	10200	76		" "
9500	9100	(58)		Piper #1
9500	9200	55		" "
9500	9300	55		" "
9500	9400	55		" "
9500	9500	54		" "
9500	9600	58		" "
9500	9700	67		" "
9500	9800	72		Outlet
9500	9900	93		Shamrock #3
9500	10000	102		" "
9500	10100	98		" "
9500	10200	68		" "

CO-ORDINATES East	North	DEPTHS Est.	Actual	CLAIM
9600	9200	(55)		Piper #1
9600	9300	55		" "
9600	9400	50		" "
9600	9500	50		" "
9600	9600	56		" "
9600	9700	62		" "
9600	9800	78		Shamrock #3
9600	9900	102		" "
9600	10000	105		" "
9600	10100	90		" "
9600	10200	60		" "
9700	9300	(50)		Piper #1
9700	9400	50		" "
9700	9500	47		" "
9700	9600	54		" "
9700	9700	60		" "
9700	9800	90		Shamrock #3
9700	9900	102		" "
9700	10000	102		" "
9800	9400	(45)		Piper #1
9800	9500	(44)		" "
9800	9600	(50)		" "
9800	9700	(61)		" "
9800	9800	(90)		Shamrock #3
9800	9900	(103)		" "
9800	10000	(103)		" "
9900	9600	(55)		Shamrock #3
9900	9700	(66)		" "
9900	9800	(80)		" "
9900	9900	(101)		" "
9900	10000	(105)		" "
10000	9600	(60)		Shamrock #3
10000	9700	(67)		" "
10000	9800	(75)		" "
10000	9900	(80)		" "
10100	9700	(58)		Shamrock #3
10100	9800	(59)		" "
10100	9900	(70)		" "
10100	10000	(80)		" "
10200	9800	(40)		Shamrock #3
10200	9900	(60)		" "
10200	10000	(63)		" "
Total proposed		16,000 feet		
Total approved		13,500 feet		

The above co-ordinates refer to a certain "Triangulation Point", established by the U.S.G.S., about 500' northerly from the East 1/4 cor. of sec. 15, T. 48 N., R. 18 W., N.M.P.M., in western Montrose County, Colorado. This "point" is a capped and labeled iron pipe, set in sandstone at the high point of a ridge in the area concerned. It is marked on the maps accompanying this report.

This Triangulation Point has been arbitratily chosen as a reference point in this survey and report. Its assumed co-ordinates are 10,000' north, and 10,000' east.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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DMEA 3355

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

Engineering Report

By M. H. Salsbury
Mining Engineer
Bureau of Mines

Reviewed by
OPERATING COMMITTEE
9-17-54
(date)

DMEA 3355

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

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ILLUSTRATIONS

Figure	Follows Page
1. Location map, Shamrock Group, Lowell A. Griffith Associates, Montrose County, Colo.	1
2. Plan of Lowell A. Griffith Associates claims showing approximate location of proposed and approved wagon-drill holes, sections 14 and 15, T. 48 N., R. 18 W., New Mexico principal meridian	*

*With geologic report.

DMEA 3355

SHAMROCK GROUP
LOWELL A. GRIFFITH ASSOCIATES
MONTROSE COUNTY, COLORADO

ENGINEERING REPORT

By M. H. Salsbury

INTRODUCTION

The Shamrock Group of claims located in the Carpenter Flats area, Montrose County, Colo., near Uravan, was examined by a Defense Minerals Exploration Administration Region IV examining team on May 18, 1954. They were accompanied by L. A. Griffith, a partner, and the superintendent for the operators, who resides on the property.

The applicant requested Government-assisted exploration consisting of 16,000 feet of wagon drilling at an estimated cost of $24,000.00--Government participation 75 percent, or $18,000.00.

ACKNOWLEDGEMENTS

Data were obtained from the applicants and from examination of the property. Additional geological background was furnished by the Geological Survey member of the examining team, R. L. Boardman, who is in charge of the field camp in the Uravan area. John Kellogg and Lou Garbrecht of the Atomic Energy Commission were contacted at different times but were unable to furnish specific information on the proposed drilling area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property is located on the northeast rim of the mesa between Beehive and Red canyons overlooking the Dolores river. It is in secs. 14, 15, 22, and 23, T. 48 N., R. 18 W., New Mexico principal meridian (fig. 1). The immediate area to the north is called Carpenter Flats. Access is over

a new road and bridge crossing the Dolores river, built for the Atomic Energy Commission.

The claims are 9 miles northwest of Uravan, Colo., the site of a uranium mill and ore-buying station, over graveled Colorado State Highway 141 and 2 miles farther on an unimproved access road. A very steep section of this road to the mesa top is probably impassable in wet weather.

The area is typical Colorado Plateau mesa land at an altitude of 5,500 feet at the rim with steep-walled canyons dissecting the table land. The potential ore-bearing rims outcrop as vertical cliffs which grade into steep talus slopes extending down to the Entrada formation, a massive cliff-forming sandstone.

The normally arid climate permits year-around operations, although surface exploration may be curtailed in severe winter weather which is experienced infrequently. Water for mining use is hauled from the Dolores river and domestic water supplies must be obtained in Uravan or Nucla. An abundant growth of pinon pine provides ample firewood. Some mining supplies are obtainable at Uravan, but most items must be transported 85 miles over U. S. Highway 50 and Colorado State Highway 122 from Grand Junction, Colo., the nearest major supply center.

Power for all purposes must be supplied by the individual operator.

LABOR AND LIVING CONDITIONS

The standard wage scale in the area for semi-skilled labor is $1.50 to $1.75 per hour. The labor supply is reasonably adequate. Housing facilities in the towns of the region are inadequate although many new units have been or are being constructed. Men employed in the vicinity of the

Shamrock Group are living in cabins and house trailers near the job site. Operators furnish some housing and many workmen have their own trailers.

HISTORY, PRODUCTION, AND OWNERSHIP

The mining history of Carpenter Flats dates from the first exploration of the area prior to World War I. There are a few old workings, which were mined for vanadium, still open. One stope on the Eclipse claim, adjoining the applicants' property on the west, was visited by the examining team. This was a small rim deposit which may have contained several hundred tons of ore. After the early exploration, there was very little activity until 1949. Since then, mining locations have been made on most of the area and a limited amount of exploration carried on. At present, there are two underground operations in the vicinity of the Shamrock Group: a mining operation on the Dads claim immediately to the south, and an adit tunnel being driven from a rim outcrop on the Outlet claim by the applicants (fig. 2, with the geologic report).

Early production in the vicinity is not recorded but was undoubtedly small. Since 1951 there has been a small production from the Dads claim on the Mal Pais property, first worked by the English Oil Company of Salt Lake City, Utah, and currently being operated by the Mal Pais Mining and Engineering Company of Grand Junction, Colo. The Atomic Energy Commission furnished, at the request of the Bureau engineer, the following production figures on the Dads claim: period 1951 to March 1954, 202 tons averaging 0.42 percent U_3O_8 and 1.85 percent V_2O_5. A production figure furnished Boardman, however, showed only 30 tons of ore. In any case, the production was small.

L. A. Griffith reports the shipment of 3 tons of ore averaging 0.50 percent U_3O_8 and 2.4 percent V_2O_5 , and another small shipment of

lower grade not yet settled from a pocket encountered in the current operation on the Outlet claim.

The property consists of 13 unpatented claims owned by K. M. Andrews and D. K. Andrews of Nucla, Colo., and leased to L. A. Griffith, trustee, who has assigned one-half interest to the Construction Specialties Company of 2625 Walnut Street, Denver, Colo., with the consent of the owners. This is substantiated by unsigned copies of unrecorded agreements executed by L. A. Griffith, the two Andrews, and M. E. Griffith and F. A. Burns, president and vice-president, respectively, of the Construction Specialties Company, which were furnished with the application.

The interest of Paul H. Keating of Golden, Colo., who is listed as one of the partners, is not disclosed. A copy of the original lease from the Andrews to L. A. Griffith was not furnished. If the project is approved for a loan, the usual owner's subordination agreements will be required.

Only seven of the claims listed are concerned in the proposed project. Recorded in the Montrose County, Colo. courthouse, at Montrose, Colo., they are as follows:

Claim	Date filed	Book	Page	Locator
Piper No. 1	March 30, 1953	349	567	K. M. and D. K. Andrews
Piper No. 2	March 30, 1953	349	567	" " " "
Piper No. 3	March 30, 1953	349	568	" " " "
Shamrock No. 2	April 13, 1950	343	9	" " " "
Shamrock No. 3	April 13, 1950	343	10	" " " "
Shamrock No. 4	April 13, 1950	343	11	" " " "
Outlet	April 15, 1954	?	?	" " " "

The effective area of the Outlet claim, which was located to cover several open fractions and a tunnel portal site, is not large. No evidence of adverse conflicting locations was found during the investigation although a complete check was not made. To date, application has not been made to

the Atomic Energy Commission for validation. According to the Denver office of the Bureau of Land Management, the only oil and gas lease outstanding is No. 05074, dated October 1, 1952, on the SW1/4 of sec. 14. This does not conflict. An oil and gas lease, No. D056729, was issued on sec. 15 and the NW1/4 of sec. 14 but the record shows that it was closed out in 1950. The fact that the ground has been covered by an oil and gas lease might possibly cloud a title based on a mining location. The existence of such a lease, even though not now in effect, might be taken as evidence that the land was known to be valuable for oil or gas (minerals listed in the Mineral Leasing Act of 1920) and therefore is not open to mining location. Validation under Public Law 250 or Circular No. 7 of the Atomic Energy Commission, if possible, would be advisable, in the opinion of the writer. However, the published final dates for making such applications on these particular claims appear to have been passed.

Withdrawals for a "museum site" and for a power site are mentioned in the application. A map in the Denver office of the Bureau of Land Management shows a "museum site" but the notation has no meaning to personnel in that office and can probably be disregarded.

The withdrawal of sec. 14 for a power site was made in 1925. In 1940 and 1953 portions of this section were restored to the public domain. Portions of the Shamrock No. 3 and Outlet claims conflict with the power site withdrawal in the SW1/4 of the NW1/4 of sec. 14, which has not been restored. However, in the revised exploration proposal the areas in conflict have been eliminated from consideration for other reasons.

DESCRIPTION OF THE DEPOSITS

Uranium-vanadium deposits of the Uravan district occur in four horizons or rims in the Jurassic Salt Wash formation which caps many of the mesas. The uranium occurs as carnotite and associated minerals in sandstone ledges as replacement of buried trees or other carbonaceous matter in the sandstone. Over most of the applicants' property all but the lowest potential ore horizon, usually called the first rim, has been removed by erosion. Although this horizon has been the least productive, taking the Uravan district as a whole, there have been many small mineable ore bodies found in it. The ore bodies mined so far on adjacent property have been small but of good grade. The grade of the ore in the old Eclipse workings must have been fairly high although it was not worked for uranium, and the ore produced from the Dads claim ran 0.42 percent U_3O_8. There are probably smaller occurrences similar to the one found in the Outlet tunnel, which contained only a few tons of ore.

The known thickness of ore was from a few inches to 3 feet or more at points where rolls in the bedding or other factors favored deposition. High-grade replacements of tree trunks are found occasionally.

The lateral extent and thickness of ore in the Eclipse workings were very erratic so far as could be seen. The maximum lateral dimension was not over 100 feet. No ore trends for the immediate area have been established.

MINEABLE ORE RESERVES

There are no ore reserves on the property and no sampling was done.

PRESENT STATUS

Exploration and Development

Work accomplished to date consists of a limited amount of wagon drilling on the southeast end of the Shamrock No. 3 claim and the tunnel from a rim portal on the Outlet claim which is being driven to investigate values reported in the drill holes. On May 18, 1954, the tunnel had been driven 253 feet on a course S. 45° W.

A small "show" along the rim southeast of the tunnel portal had been investigated at sometime in the past by a shallow excavation but no ore had been found. The wagon drilling, totaling at least nine holes, was done by the owners of the claims who kept no records of the results. Two of the holes were reported to have encountered ore. Griffith was able to probe one of these holes (9F) and verified the presence of uranium mineralization. He also attempted to drill several offset holes but none were completed because of inadequate equipment.

Mining and Milling and Other Facilities

The property is equipped with a compressor building, a cabin, several house trailers, portable compressor and light plant, drilling and slushing equipment, and miscellaneous mining tools.

PROJECT PROPOSALS WITH COSTS

The applicant proposed drilling 210 holes averaging 76 feet each in depth, or a total of 16,000 feet of wagon drilling at a cost of $1.50 per foot, or $24,000.00. Little or no drill site preparation is required. The hole locations were laid out on a grid with 100-foot hole spacings on areas where the distance to the bottom of the Salt Wash formation is not over 115 feet. The holes were tabulated and referenced to a coordinate

system with the estimated depth of each hole given. The applicants have evidently planned the program without regard to the previous drilling and the present underground operation which are not mentioned in the report accompanying the application. With the exception of holes in the vicinity of the previous work, and some other locations close to the rim and property boundaries, the drilling pattern on 100-foot centers is probably as suitable for exploration of the area as any that could be devised at a cost commensurate with the probable size of ore bodies. The cost of drilling on centers closer than 100 feet would hardly be justified even though the maximum dimension of individual ore bodies is likely to be less than 100 feet.

Any mineralization found by the proposed drilling could be delimited by offset drilling at about 50-foot intervals. An ore body with minimum lateral dimensions of 50 by 50 feet, average thickness 2 feet, and average grade 0.40 percent U_3O_8, containing 400 tons of ore, is estimated to be the smallest deposit which would return the cost of a shaft 100 feet deep or other development of equal cost. Such an ore body would return approximately $25,000.00 to a shipper, including bonus, and the DMEA royalty would be about $1,250.00. More than 4,000 tons of ore of this grade would have to be shipped to return the Government's share of the revised estimated cost.

The examining team recommends a revised program eliminating the holes near the rim and the property limits, as well as those in the area now being explored by the current underground operations, which has already been drilled with inconclusive results.

The revised proposal includes 171 holes totaling 13,500 feet at an estimated cost of ~~$1.36~~ 1.30 per foot compared to $1.50 per foot estimated by the applicants.

This is the maximum expenditure which is considered justified. It is proposed with the assumption that any offset drilling will be done by the

applicants at their expense. Griffith agreed to the revised program which does not differ greatly from the applicants' proposal. The estimated time for completion is 27 weeks or 6-3/4 months, based on a drilling rate of 500 feet per week.

Following is an itemized estimate:

Contracts		
Wagon drilling of 171 holes to average depth of 79 feet, or a maximum of 13,500 feet at $1.00 per foot (including move in and move out)	$13,500.00	
Total contracts		$13,500.00
Labor		None
Supervision and Technical Services		
One foreman, or engineer-geologist, each part time, 6-3/4 months at $500.00 per month. (Foreman or engineer to be present whenever drilling is in operation)	3,375.00	
Total Supervision and Technical Services		3,375.00
Operating Materials and Supplies		
Fuel, lubricating oil, grease and repairs on truck, 6-3/4 months at $50.00 per month	337.50	
Total Operating Materials and Supplies		337.50
Operating Equipment		
Rental		None
Depreciation		
One used pick-up truck valued at $1,200.00, depreciated at $20.00 per month, 6-3/4 months	135.00	
Total Operating Equipment		135.00
Miscellaneous		
Bookkeeping (To be done by supervisory personnel)		None

Compensation Insurance, Social Security, Unemployment tax on supervision and technical services 8 percent of $3,375.00	$ 270.00	
Maximum of 200 samples of drill cuttings analysed for U_3O_8 and V_2O_5 at $4.00 each	800.00	
Total Miscellaneous		$1,070.00
Total cost of project		$18,417.50
Over-all cost per foot of drilling		$1.36
Cost per foot of drilling, less sampling		1.30

Summary of Costs

Contracts	$13,500.00
Supervision and technical services	3,375.00
Operating Materials and Supplies	337.50
Operating Equipment	135.00
Miscellaneous	1,070.00
Total cost of project	$18,417.50
Unit cost of drilling 13,500 feet of wagon drill holes, less sampling cost, per foot	$1.30

CONCLUSIONS

The proposed project would explore a potential ore-bearing horizon of the Salt Wash formation. This horizon is the lower rim that has not been found to contain the major deposits of the area, and individual deposits are likely to be small, judging by past production on other properties. Nevertheless, there is a good possibility of finding commercial ore. An ore body with dimensions of 75 feet by 75 feet laterally, averaging 2 feet thick, would contain a maximum of 1,000 tons of ore. Allowing for small barren areas and irregular limits of mineralization usually found in this type of

deposit, the largest ore body which is likely to be found on the Shamrock would probably produce 500 to 600 tons.

There may be smaller lenses, similar to the one found in the Outlet tunnel, containing a few tons of ore, which would not be worth mining unless they happened to be encountered in driving for larger deposits. For this reason, offset drilling around any mineralized holes would be advisable to determine if the deposit, or deposits, were large enough to justify driving costs, prior to starting development to reach them. The minimum size of a deposit which would justify development would depend on its position in relation to the rim or mine workings. Offset drilling, as part of a Government-assisted exploration project, was not included as part of the revised program because the cost of drilling on 100-foot centers would be as much as could be justified.

The applicants' operation is managed by L. A. Griffith who has had wide experience in metal mining and is competent to supervise the proposed exploration. He recognizes the necessity for sampling supervision on a wagon drilling operation and is prepared to furnish this. He states that a competent and responsible drilling contractor would be employed. Engineering and geologic services on a part-time basis would be furnished by Paul H. Keating, Associate Professor of Geology, Colorado School of Mines, and William Griffith, a young engineer, nephew of L. A. Griffith.

RECOMMENDATIONS

It is recommended that a Government-assisted exploration loan in the amount of $18,355.00--Government participation 75 percent, or $13,766.25--be approved, and a short-form contract prepared for a program consisting of:

Wagon drilling 171 holes, 13,500 feet maximum as shown on figure 2 and the appendix, with the geologic report. The recommended cost is $1.30 per foot, or	$17,550.00	
Chemical analyses of a maximum of 200 samples for U_3O_8 and V_2O_5. The recommended cost is $4.00 each, or	800.00	
Total maximum amount of contract	$18,355.00	18,350.
Government participation, 75 percent	$13,766.25	13,[illegible]

Suggested Contract Provisions

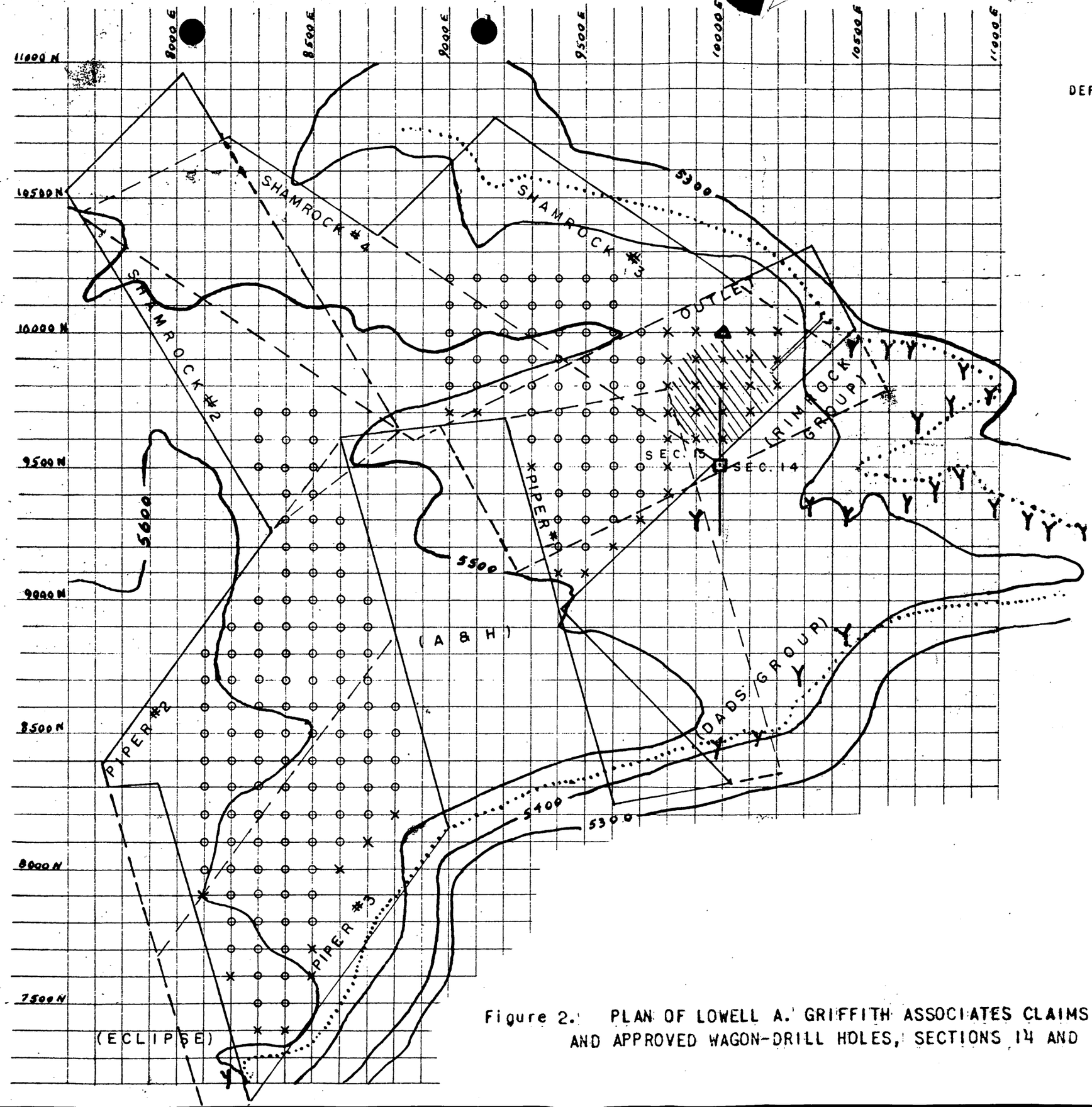
No hole is to be drilled closer than 100 feet from any other hole.

The method of all sampling, of all determinations, and of recovering drill-hole cuttings are subject to Government approval.

All drill-hole cuttings of suspected mineralized material are to be sampled at not more than 1-foot intervals. Cuttings are to be recovered by a Duclone dust collector. Each mineralized sample is to be checked for equivalent U_3O_8 by radiometric means, and splits of such samples are to be analysed chemically for U_3O_8 and V_2O_5, if the equivalent U_3O_8 determination indicates the material contains significant uranium.

Splits of drill-hole cuttings representing the entire length of all holes, taken at intervals of not more than 5 feet in barren material, and not more than 1 foot in suspected mineralized material, shall be retained for inspection by Region IV DMEA representatives.

Supervision satisfactory to the Government, consisting of either the contractor's foreman or an engineer-geologist, will be employed at the drill-rig when it is in operation. Supervisory services will include hole spotting, collection, examination, and storing of samples, and preparation of maps and geologic and engineering reports.



U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3355

EXPLANATION

- APPROXIMATE BASE OF LOWEST SALT WASH SANDSTONE LENS
- o LOCATION OF WAGON-DRILL HOLE PROPOSED BY APPLICANTS AND APPROVED BY EXAMINING FIELD TEAM
- x LOCATION OF WAGON-DRILL HOLE PROPOSED BY APPLICANTS AND REJECTED BY EXAMINING FIELD TEAM
- Y PROSPECT OR MINE
- ADIT AND UNDERGROUND DRIFT
- △ U. S. GEOLOGICAL SURVEY TRIANGULATION POINT ARBITRARILY CHOSEN AS 10,000 FEET N., AND 10,000 FEET E., AS A REFERENCE POINT FOR THE LOCATION OF PROPOSED WAGON-DRILL HOLES
- APPROXIMATE AREA OF GROUND PREVIOUSLY DRILLED
- APPROXIMATE LOCATION OF ¼ LAND SECTION CORNER
- BOUNDARY OF GROUND LEASED BY APPLICANTS AND NOT IN CONFLICT WITH PREVIOUS CLAIMS. CLAIMS BELONGING OR LEASED TO PARTIES OTHER THAN THE APPLICANTS ARE LABELED IN PARENTHESES

BY R. L. BOARDMAN (COMPILED FROM MAPS SUBMITTED BY APPLICANTS AND FROM DATA OBTAINED FROM FIELD EXAMINATION)

Figure 2. PLAN OF LOWELL A. GRIFFITH ASSOCIATES CLAIMS SHOWING APPROXIMATE LOCATION OF PROPOSED AND APPROVED WAGON-DRILL HOLES, SECTIONS 14 AND 15, T. 48 N., R. 18 W., N.M.P.M.

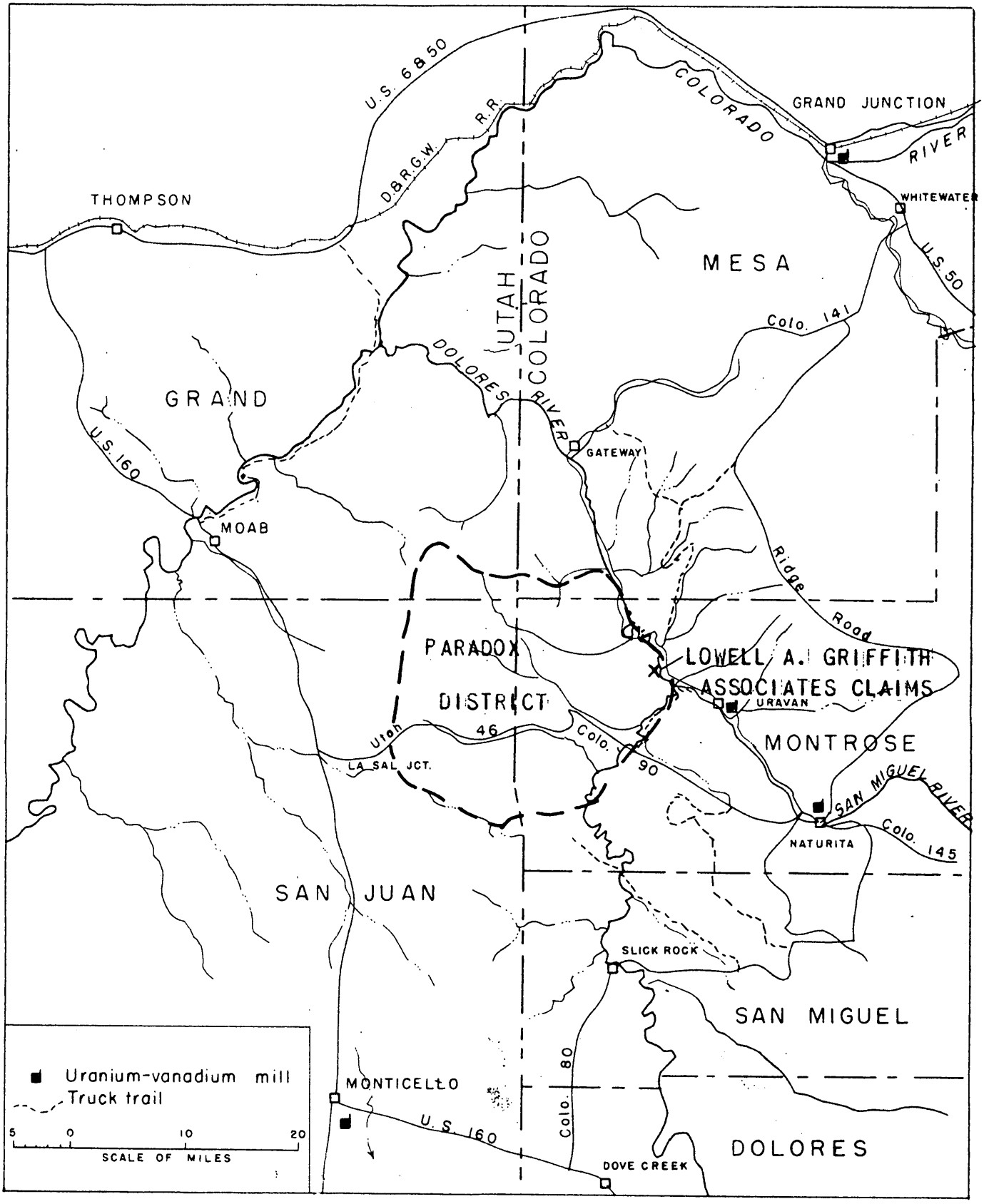
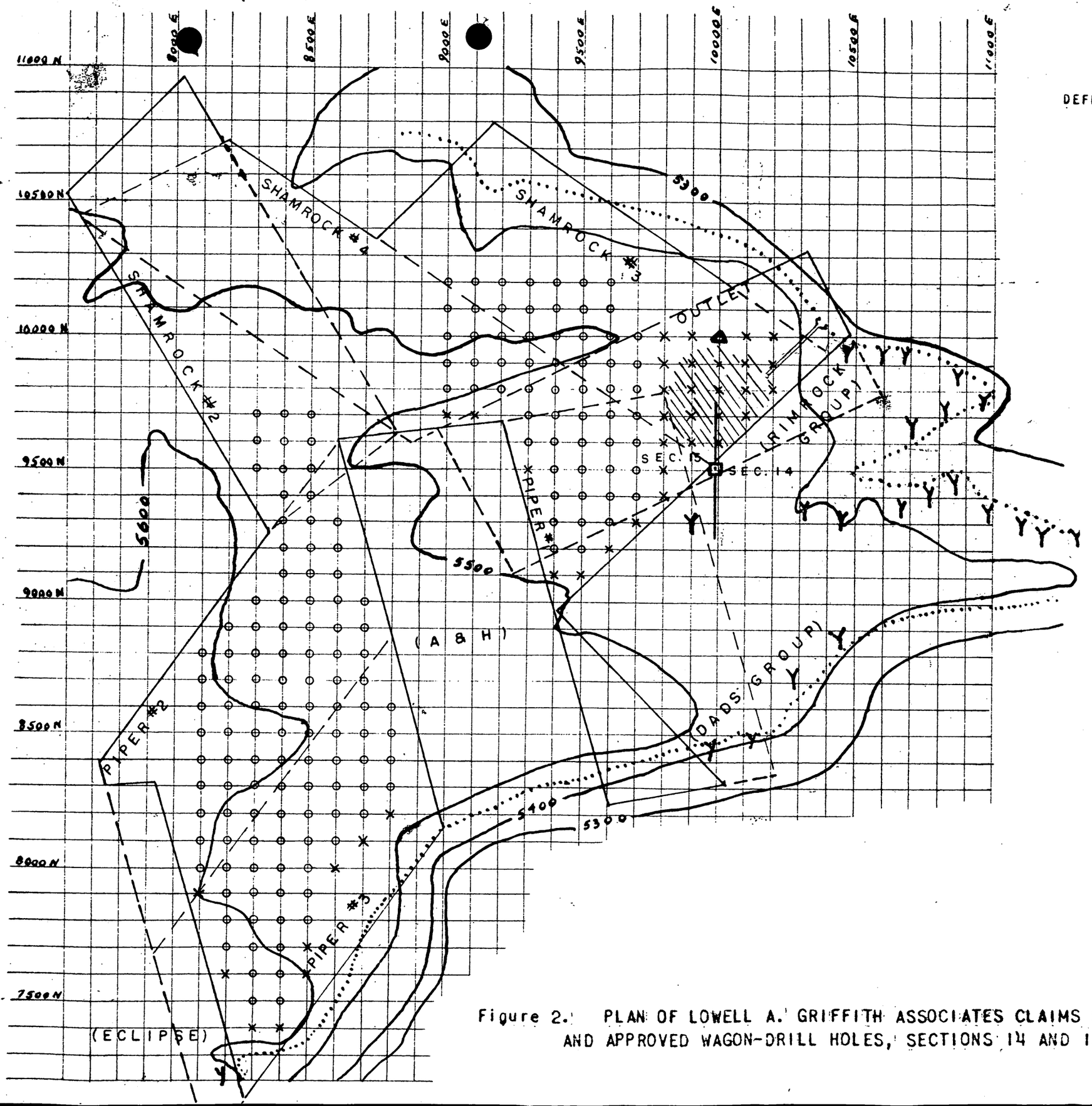


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING THE APPROXIMATE LOCATION OF LOWELL A. GRIFFITH ASSOCIATES MINING CLAIMS, CARPENTER FLATS AREA, MONTROSE COUNTY, COLORADO



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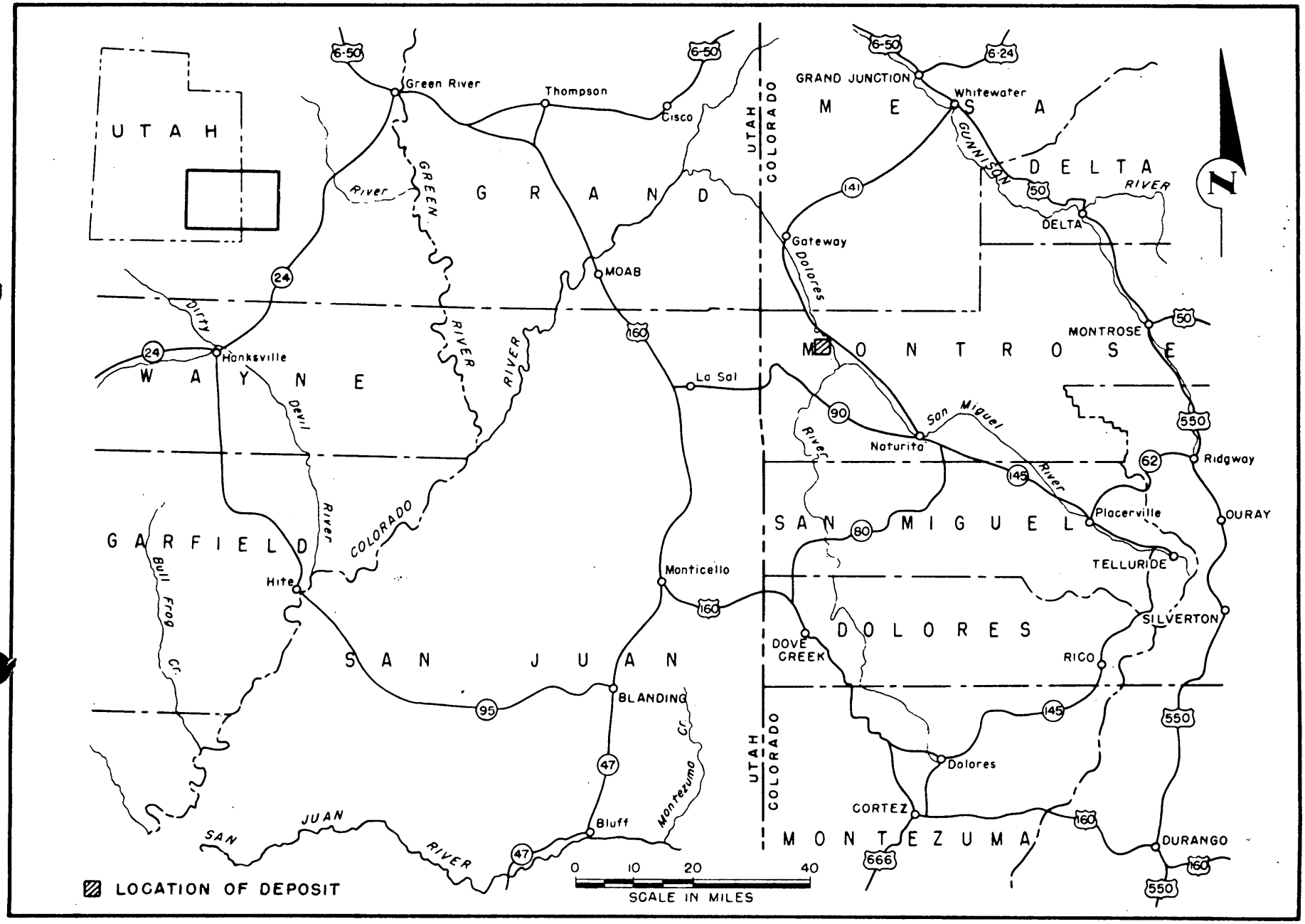

FIGURE 1 - LOCATION MAP, SHAMROCK GROUP, LOWELL A. GRIFFITH ASSOCIATES, MONTROSE COUNTY, COLO. (DMEA 3355)

REAdams/la/9-8-54

Cedam

DMEA - Department of the Interior

14X4401(01) Revolving Fund, Defense Production Act, Interior (Allocated Working Fund to Office of the Secretary)

T E L E T Y P E

SEP 8 1954

MR. W. H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION IV
BUREAU OF MINES
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTEL 9-7-54 CONTRACT NO. IDM-E703 ASSIGNED TO DOCKET NO. DMEA-3355,

LOWELL A. GRIFFITH ASSOCIATES.

C. O. Mittendorf

C. O. MITTENDORF, ADMINISTRATOR

REAdams/la/9-8-54

Copy to: Adm. R. File
~~Mails~~ & Files
Mr. Adams

SENT
SEP 8 1954
Clerical Service Section

R.C.G.

E-703

Mr. George Selfridge
Sept. 7, 1954
Unattended service

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP - 8 1954

BUR MINES DN 235 9-7-54 1-20 PM

CHAIRMAN OPERATING COMMITTEE DMEA

PLEASE ASSIGN A NUMBER TO CONTRACT COVERING DOCKET NO. DMEA 3355, LOWELL A. GRIFFITH ASSOCIATES, A PARTNERSHIP CONSISTING OF LOWEEXXX LOWELL A. GRIFFITH, CONSTRUCTION PXXXX SPECIALITIES COMPANY, AND PAUL H. KEATING. COMMODITY URANIUM. CONTRACT DATED SPETEMBER 9,1954. PROPERTY IN MONTRSXXXX MONTROSE COUNTY, COLORADO. AMOUNT OF GOVERNMENT RARTICIPATION $13,762.50. TOTAL AMOUNT OF CONTRACT $18,350.00.

W H KING

Denver, Colo.

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

224 New Customhouse
Denver 2, Colorado

August 25, 1954.

Memorandum

To: Chairman, Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3355 (Uranium), Lowell A. Griffith Associates (Shamrock Group), Montrose County, Colorado.

The application for Government assistance in exploration work estimated to cost $18,350.00 has been approved by us and a contract is being prepared.

Government participation will be 75 percent or $13,762.50.

Four copies of the Final Report will be forwarded when the contract is processed.

W. H. King

W. H. King

E. N. Harshman

for A. H. Koschmann

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

224 New Customhouse
Denver 2, Colorado

July 8, 1954.

Lowell A. Griffith Associates
c/o Paul H. Keating
Box 163
Golden, Colorado

Re: Docket No. DMEA-3355
(Uranium)

Dear Mr. Keating:

Before we can further process your application on the Shamrock group of claims it will be necessary for this office to receive the following:

1. Signed copy or photostat of a signed copy of the original lease from the Andrews to Griffith.

2. Signed copy or photostat of a signed copy of assignment to Specialties Construction Company.

3. Signed copy or photostat of a signed copy of partnership agreement of Lowell A. Griffith Associates.

4. Recording data on Outlet claim.

5. Your application states that your property in Section 15 is in conflict with an oil and gas lease and that there was a "Museum Site" withdrawal by "X" agency. This apparently constitutes a cloud on the title.

When you have submitted the above documents and have furnished documentary proof that you have clear title and the right to enter upon and mine ore from these premises, we will continue to process your application.

Very truly yours,

W H King

W. H. King
Executive Officer
DMEA Field Team, Region IV

HMC:cwm

cc: Docket
AHKoschmann
WMTraver
Administrator, DMEA
Chron.
HMConnors

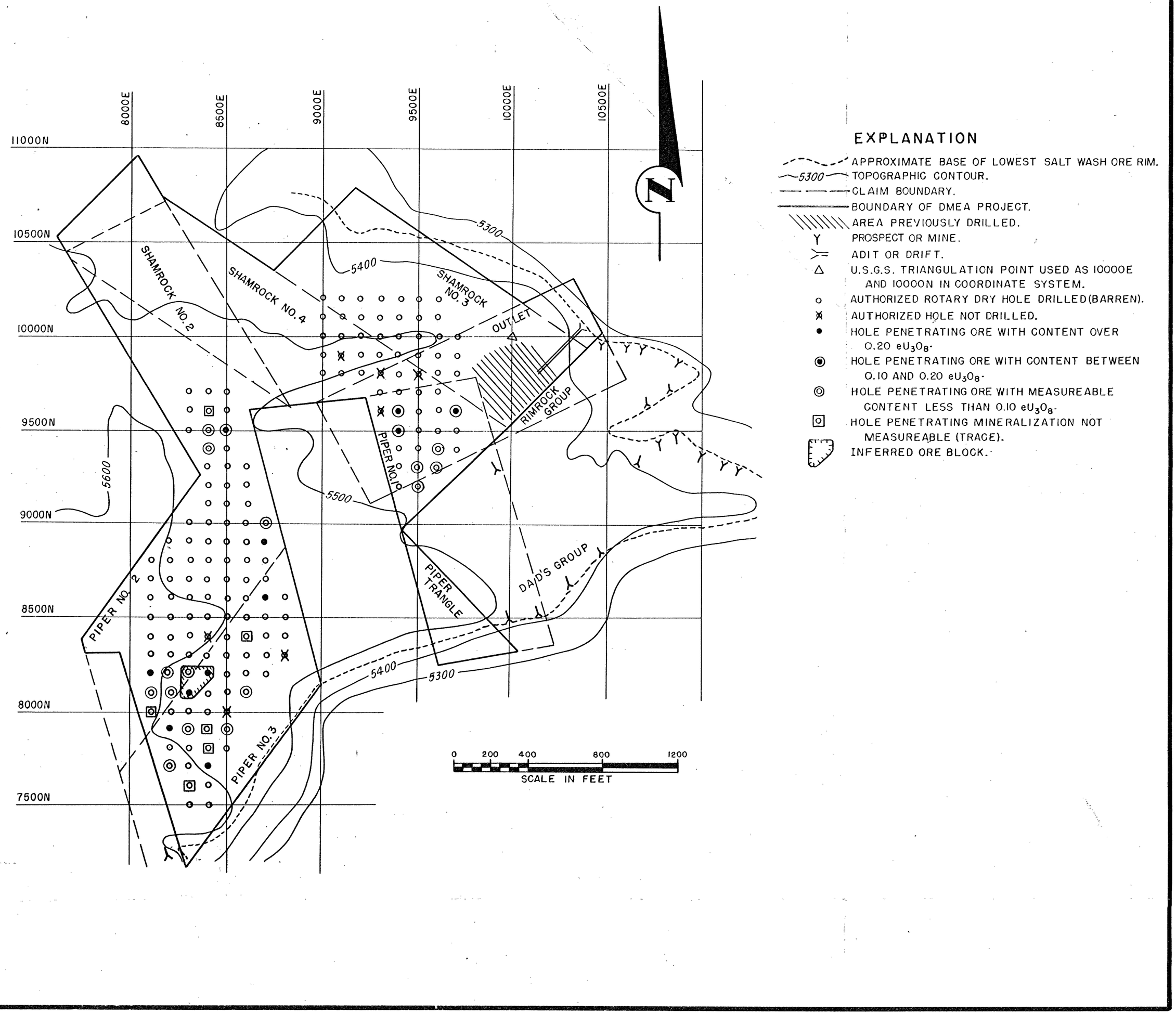

FIGURE 2-SHAMROCK AND PIPER CLAIMS SHOWING CLAIM BOUNDARIES, DMEA DRILL HOLES, HOLES IN ORE, AND LOCATION OF INFERRED RESERVE, L.A.GRIFFITH ASSOCIATES (URANIUM), MONTROSE COUNTY, COLO. DMEA 3355, CONTRACT Idm-E 703