DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E 994 DMEA NO. 4191

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(Withdrawn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

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

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

Left Side

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

Right Side

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

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

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

Left Side

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

Right Side

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

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

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

9775

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-E994, Docket DMEA-4191 (uranium), dated August 21, 1956, with

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

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 White Swan, et al., Groups of claims located in Inyo County, California, during the period January 1, 1959, through December 6, 1962.

A certification of discovery or development was issued on August 30, 1957, and, in accordance with Article 8 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. An Audit Certificate dated August 5, 1957, indicated accepted costs under the exploration contract amounting to $12,811.01 with the Government's contribution on a 75 percent basis being $9,608.25.

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 also found no sales subject to the Government's royalty through December 31, 1958. Accordingly, as of December 6, 1962, the royalty account of this project was found to be:

Total Royalty Payable	$ -0-
Total Royalty Paid	-0-
Balance of Royalty Due	$ -0-

E. D. Talbert

E. D. Talbert, OME Auditor

December 12, 1962

Idm-E994 Ceso Uranium, Inc. [redacted]-4191

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 land consists of 23 contiguous unpatented claims (White Swan Nos. 1 to 7, 9 and 10, Linda Sue Nos. 1 to 5, Helen Faith Nos. 1 to 5, and Esther Nos. 1, 2, 4, and 5) in secs. 24 and 25, T. 20 S., R. 37 E., and secs. 24 and 25, T. 20 S., R. 37½ E., M.D.B. & M. At the time the contract was executed, the Operator was the owner of the claims.

Exploration work under the contract was completed in April 1957. No ores were produced during the exploration period. Subsequent examinations of the property by [redacted] and [redacted] regional representatives disclosed no production through December 1958.

In a December 6, 1962, reply to a [redacted] Form 63 inquiry the Operator stated that neither production nor change in property status has occurred since December 31, 1958.

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 contain no evidence of any production from the property 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 royalty which might be disclosed.

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

MAY 25 1959 OME

I have reviewed the files and records of the OME Field Team, Region II, pertaining to Contract No. E-994, Docket No. DMEA-4191 (Uranium), dated August 21, 1956, including Amendment Nos. 1 to 4 inclusive, with

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

for the purpose of determining the amount of royalties due the U. S. Government on sales of Uranium Ore from property known as the White Swan et al Group of Claims, located in Inyo County, California, during the period August 21, 1956 to December 31, 1958.

A certification of discovery or development was issued on August 30, 1957 and accordingly royalty is payable on all production from the land described in Article 2 and Annex I of the contract, for a maximum period of 10 years from date of contract. A Final Audit Certificate and Report dated August 5, 1957, indicated acceptable costs under the exploration contract amounted to $12,811.01 with the Government's contribution on a 75 percent basis, being $9,608.25

No royalties have been paid to date in connection with this contract.

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

(a) According to the Field Team's Semi-Annual Report of Certified Projects for the period July 1, 1958 to December 31, 1958, there was no production during the period covered by this review.

(b) 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 royalty which might be disclosed.

May 21, 1959

George Mavor
George Mavor, OME Auditor

Docket

Murphy
Ellis
Rubin
Thompson
Talbut
Martin
Johnson

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

To: Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

Pursuant to the provisions of Exploration Project Contract No. Idm-1994, dated August 21, 1956, (Docket No. DMEA-4191), hereinafter called the "contract," between the Coso Uranium, Inc., a California corporation, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien therefor 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:

Rotary drilled holes penetrated a significant deposit of ore-grade uranium-bearing material in the Pliocene-Pleistocene Coso lake beds which lie within the area of the claims listed in Annex I of the contract.

Dated: AUG 30 1957

THE UNITED STATES OF AMERICA

By C O Mitteudorf
Administrator, Defense Minerals
Exploration Administration

FMMurphy/ism 8-6-57
cc to: Operator
Jesse C. Johnson, Director
Division of Raw Materials, AEC
Contract Adm. & Audit Division
DMEA Field Team, Region II (2)
Finance Office
Docket
Admr.'s Reading File
F. E. Johnson
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
F. M. Murphy

DEPARTMENT OF MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

EXTRA COPY
D M E A
RECEIVED AUG 12 1957

DATE	INITIALS	CODE
8-12	JLC	
16	Com	
"	[illegible]	

AUDIT CERTIFICATE

I have examined the records and transactions of:

Congo Uranium, Inc.,
a California Corporation
2685 Americana Avenue
Long Beach 6, California

pertaining to Exploration Project Contract No. [illegible], Docket No. [illegible]-4191, dated August 21, 1956, including Amendment Nos. 1 to 4, inclusive, covering a project for the exploration of uranium, on property located in Inyo County, California and commonly known as the White Swan, et al. Group of Claims, for the Months of January 1957, February and March 1957 and April 1957.

My examination was made in accordance with generally accepted standards applicable in the circumstances.

The audit disclosed the following facts in regard to the amount to be paid the contractor.

Total cost as billed by contractor	$12,811.01
Exceptions	-0-
Total Accepted Cost	$12,811.01

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 Nine Thousand Six Hundred Eight and 25/100 Dollars:

** $9,608.25 **

is valid and proper.

This Certificate is issued on the provision 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 project.

George Mavor
George Mavor
Auditor

August 5, 1957

AUDIT REPORT

I INTRODUCTION

On July 18, 1957, a final audit (covering operations for the Months of January 1957, February and March 1957 and April 1957) was made of the records and transactions pertaining to Exploration Project Contract No. Idm-2994, Docket No. DMEA-4191, dated August 21, 1956, including Amendment Nos. 1 to 4, inclusive, with:

Coso Uranium, Inc.,
a California Corporation
2485 American Avenue
Long Beach 6, California

covering a project for the exploration of uranium, on property located in Inyo County, California, and commonly known as the White Swan, et al Group of Claims.

Under date of December 10, 1956 an agreement was entered into between Coso Uranium, Inc., and Reese H. Taylor, Jr. & Associates which stipulated certain conditions and considerations, including the transfer of a portion of the Coso Uranium, Inc., mining claims to Reese H. Taylor, Jr. & Associates. After certain conditions and considerations had been accomplished, then Reese H. Taylor, Jr. & Associates would render assistance in the exploration work, together with financial aid. The total cost of the DMEA Exploration Project aggregating $12,611.01 was paid by Reese H. Taylor, Jr. & Associates and the Government's 75 percent contribution of costs paid by Treasury Department checks to the Coso Uranium, Inc., were endorsed over to Reese H. Taylor, Jr. & Associates.

The office of the Coso Uranium, Inc., located at 2485 American Avenue, Long Beach, California was visited July 17, 1957, for the purpose of auditing the project costs, and I was informed by Mr. William J. Jones, Secretary of the Corporation that no records had been maintained covering the cost of the project, and that the entire financing of the project costs had been made by Reese H. Taylor, Jr. & Associates, and that the available records covering the cost of the project were located in the office of Reese H. Taylor, Jr., who is a Junior Partner in the law firm of Gibson, Dunn & Crutcher, 634 South Spring Street, Los Angeles, California. Mr. Reese H. Taylor, Jr. has an office assigned to him in the legal firm's suite of offices.

Arrangements were made to audit the available records in the office of Mr. Reese H. Taylor, Jr. July 18, 1957, in the presence of Mr. Emmet R. Cullity, Mining Engineer, employed by Reese H. Taylor, Jr. & Associates. Mr. Benjamin H. Sheahan, Bureau of Mines Engineer was also present during the audit, and the cooperation and assistance rendered by

both Engineers is hereby acknowledged.

II GENERAL INFORMATION ON RECORDS

The entire cost of the project had been financed by Reese H. Taylor, Jr. & Associates, and the following records were made available for audit purposes:

1. Check Stubs - numbered
2. Cancelled bank checks - numbered-all checks signed by Reese H. Taylor, Jr. Checks drawn on California Bank, Los Angeles, California
3. Bank Statements
4. Bank Deposit Book
5. Invoices - Chargable to Project Costs

The accounting firm of Lybrand, Ross Bros. & Montgomery, Certified Public Accountants are employed to maintain bookkeeping records of Reese H. Taylor, Jr. & Associates. These bookkeeping records were in the accounting firm's office, and the records were not obtained in order to perform this audit, for the reason that sufficient evidence of payment was obtained from an examination of invoices and cancelled bank checks which proved the authenticity of the project costs for which the Government participated with a 75 percent contribution. During the review of these invoices Mr. Benjamin R. Sheehan, Bureau of Mines Engineer was present and he agreed that the work had been performed and the costs were proper charges to the cost of the project, which were comprised of the following items of cost:

	Contract Costs	Costs Claimed	Actual Costs
(1) Independent Contracts			
Rotary Drilling *	$10,400.00	$10,396.01	$11,321.80
(4) Operating Equipment			
Rental - Bulldozer *	1,008.00	1,008.00	1,814.22
(7) Miscellaneous			
Sampling and Analysis	1,407.00	1,407.00	2,644.14
Totals	$12,815.00	$12,811.01	$15,780.16

* Allowable Maximums

All of the above actual costs in amount of $15,780.16 were paid by Reese H. Taylor, Jr. & Associates.

III SCOPE OF AUDIT

The audit consisted of a complete analysis of all expenditures, in order to ascertain the accuracy, propriety and validity of the costs as shown in the "Totals to Date" column of Form MF-104, Operator's Monthly Report and Voucher, for the month of April 1957. The extent of the audit and the findings under each of the "Items of Cost" follows:

(1) Independent Contracts $10,396.01

An examination was made of all charges under this category, which included the verification of invoices and cancelled bank checks. The work performed covered rotary drilling of 38 holes, and did not exceed the "allowable maximum" of $10,400.00 as set forth in Amendment No. 4 of the Contract, and accounted for as follows:

Rotary Drilling Costs
Claimed by Operator
38 Holes Drilled

Month Claimed Form MF-104	Footage	Rate	Amount
Jan. 1957	2,000	$2.13	$ 4,260.00
" "	294	1.88	552.72
Feb. Mch. 1957	1,906	1.88	3,583.88
April 1957	1,000	2.00	2,000.00
Totals	5,200	* 2.00	$10,396.01

* average rate, not exceeding $2.00 per foot.

The actual cost to the Operator for rotary drilling is made up as follows:

Rotary Drilling
Actual Costs

Colorado Exploration Co. Sub-Contractor

Invoice Date 1957	No.	Footage	Rate	Amount
Feb. 14	95	595	$2.13	$ 1,267.35
"	"	1,206	2.13	2,568.78
Feb. 9	107	199	2.13	423.87
"	"	1,381	1.88	2,596.28
Feb. -	112	819	1.88	1,539.73
"	"	89	1.80	160.20
"	116	36	1.80	64.80
"	117	15	1.80	27.00
Apr. -	122	122	1.80	219.60

Mullen-Buckley Uranium Corp. Sub-Contractor

Apr. -	-	305	1.40	427.00
" -	-	777	1.40	1,087.80
Add: Salaries and expenses for April 1957, not				

included in rate of $1.40		
C. Housley, Geologist		500.00
J. D. Aker, Ass't Geologist		144.00
P/R Taxes and Insurance		58.49
C. Housley, Expenses		236.80
Total Actual Costs	5,544	$11,321.70
Less: Not claimed by Operator	344	925.69
Net Claimed by Operator	5,200	$10,396.01

An agreement was entered into under date of December 21, 1956, between Coso Uranium, Inc., and Colorado Exploration Company, Sub-Contractor to perform rotary drilling at the following footage rates:

Non-Coring Air Drilling

First 2000 feet	0-400 feet/hole	$1.25 per foot
2000 to 4200 feet	0-400 feet/hole	1.00 per foot
Additional footage	0-400 feet/hole	1.00 per foot

The agreement further states that the Colorado Exploration Company will furnish a mining geologist and an additional helper when needed for which the following charges will be made based on footage drilled:

first 4,200 feet	$0.88 per foot
4,200 to 10,000 feet	0.80 per foot
over 10,000 feet	0.70 per foot

An amendment to agreement dated December 21, 1956 was made effective April 4, 1957, whereby the rotary drilling would be performed by Mallen-Buckley Uranium Corporation, (Successors to Colorado Exploration Corp.) at $1.40 per foot for non-coring air-drilling. The rate of $1.40 per foot did not include geological services, therefore the operator obtained the services of C. Housley, Geologist, for the month of April 1957 at a salary of $500.00 plus travel expense which amounted to $236.80. In addition it was necessary to obtain the services of J. D. Aker, Assistant Geologist on a part time basis and his salary for April 1957, amounted to $144.00.

During the course of the audit an examination was made of the rotary drilling footage to the operator's drilling reports, and also verified to the footage record prepared by Mr. Benjamin H. Sheahan, Bureau of Mines Engineer.

(4) Operating Equipment $1,008.00

An examination was made of invoices and cancelled bank checks, and the charges under this category, covered the rental of a bulldozer from Kerbach-McCutchen, Bishop, California and the charges were accounted for as follows:

Bulldozer Rental

Period	Hours	Rate	Amount
Jan. 2 to 15, 1957	62.2	$16.00	$ 995.38
Add:			
Proportion of cost moving to and from site			12.62
Total			$1,008.00

The actual cost for bulldozing, can be accounted for in the following manner:

Bulldozer Rental
Actual Costs

Kerbach McCutchen, Bishop, California

Invoice Date	Description	Hrs.	Rate	Amount
1-15-57	Rent of Bulldozer	62.2	$16.00	$ 995.38
2-18-57	Moving to Job and Drill Site	8.0	12.00	96.00
2-19-57	Moving from Job and Drill Site	8.0	12.00	96.00
2-19-57	Low Bed transportation to and from Olancha, Calif.	12.5	12.50	156.25
	3% Transportation Tax on $156.25			4.69

Mason and Company, Olancha, California

4-13-57	Rent of Bulldozer-Trail Building	23.0	14.00	322.00
4-13-57	" " " "	12.0	12.00	144.00
Total Actual Costs				$1,814.32
Less: Not Claimed by Operator				806.32
Amt. Claimed by Operator				$1,008.00

The costs claimed by the Operator for bulldozing did not exceed the "allowable maximum" of $1,008.00, as set forth in Amendment No. 4 of the Contract.

(7) Miscellaneous $1,407.00

All of the charges under this category, covered sampling and analysis costs, for which invoices and cancelled bank checks were examined, and the costs claimed by the Operator were as follows:

402 Uranium Determinations at $3.50 ea. $1,407.00

The actual cost to the Operator is accounted for as follows:

The Brown Laboratory, Golden, Colorado

640 Uranium Determinations at $3.50 ea.	$2,240.00
Less: 5% Discount	112.04
Net Cost of Uranium Determinations	$2,127.96

Add:	
205 Radiometrics at $1.50 ea.	307.50
Freight on samples	209.67
Total Actual Costs	$2,645.13
Less: Not claimed by Operator	1,238.13
Not Claimed by Operator - 402 Determinations at $3.50 ea.	$1,407.00

The above sampling and analysis costs in amount of $1,407.00 claimed by the Operator, were in accordance with estimate shown in Amendment No. 4 of the Contract.

IV CONCLUSIONS AND RECOMMENDATIONS

This audit has disclosed that all costs as charged to this project, are reasonable and proper under the terms of the contract.

The audit also disclosed that the status as of April 30, 1957 of "allowable maximums" under this contract was as follows:

Stage I	Allowable Maximum	Total Costs	Balance
(1) Independent Contracts Rotary Drilling	$10,400.00	$10,396.01	$3.99
(4) Operating Equipment Rental-Bulldozer	1,008.00	1,008.00	-0-

The Items of Costs, as shown on the April 1957 MF-104, and approved amounts, are summarized as follows:

Stage I	Totals April MF-104	Disallowed By Audit	Accepted Costs
(1) Independent Contracts Rotary Drilling	$10,396.01		$10,396.01
(4) Operating Equipment Rental-Bulldozer	1,008.00		1,008.00
(7) Miscellaneous Sampling and Analysis	1,407.00		1,407.00
Totals	$12,811.01	--0--	$12,811.01

At the conclusion of the audit, the findings were discussed with Mr. Emmet R. Cullity, Mining Engineer, representing Reese H. Taylor, Jr. & Associates, who had financed the cost of the contract.

This report has been discussed with Mr. S. Ricker, Executive Officer, Region II, and he concurred with my findings, and agreed that the final allowable costs as presented, were necessary and allowable under the terms of the contract.

George Mavor

George Mavor
Auditor

August 5, 1957

Government's Copy

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 12 1957

DATE	INITIALS	CODE

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMEA-4191

AMENDMENT NO. 4

It is agreed this 13th day of May, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Coso Uranium, Inc., that Exploration Project Contract Idm-E994, Docket No. DMEA-4191, dated August 21, 1956, as amended, is further amended effective January 2, 1957, as follows:

1. Amendment No. 3 is revoked.

2. Stage II and Stage III of original contract are deleted.

3. In Exhibit A of the Contract, under General Provisions, add the following:

(f) All bulldozer work under the Contract shall be performed with a D-7 Caterpillar Tractor or equivalent unit of any other make.

4. In Amendment No. 2, under Exhibit "A" delete pages 2 and 3 and substitute the following:

Stage I shall consist of drilling not in excess of 36 holes, totaling not in excess of 5,200 feet of rotary drilling. The holes shall be drilled at the approximate locations shown on the map entitled "Exhibit 'M' Revised, Plan of Exploratory Drilling...," attached hereto and made part hereof.

Not in excess of 402 samples shall be chemically analyzed for their U_3O_8 content under this stage of the Contract.

5. In Exhibit A, Estimated Costs of Project are revised to read as follows:

Estimated Costs of Project

Actual Costs

Stage I

Category (1) Independent Contracts

Rotary drilling, 5,200 feet @ $2.00/foot (Average cost per foot including full-time services of geologist supervisor)	$10,400.00	

Category (2) Personal Services:

Included in cost under Category (1)

Category (3) None

Category (4) Operating Equipment:

Subcategory (a) Dozer rental: Preparation of drill sites-- 63 hours at $16.00/hr.	1,008.00	

Categories (5) and (6) None

Category (7) Miscellaneous:

Chemical analyses for U_3O_8 content of 402 samples @ $3.50/sample	1,407.00	
Estimated total cost Stage I		$12,815.00

SUMMARY

Estimated total cost of Project	$12,815.00
Government Participation @ 75% (rounded)	$9,612.00

* * * * * *

6. In Article 5 of the Contract the figures $30,725.00 and $23,044.00 are deleted and replaced by the figures $12,815.00 and $9,612.00, respectively.

This Amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O Mitchendorf
Administrator, Defense Minerals
Exploration Administration

COSO URANIUM, INC.

By [illegible]

Title President

Long
Lawyer
[illegible]
Murphy
Ellis
Talbot
Selfridge
Johnson

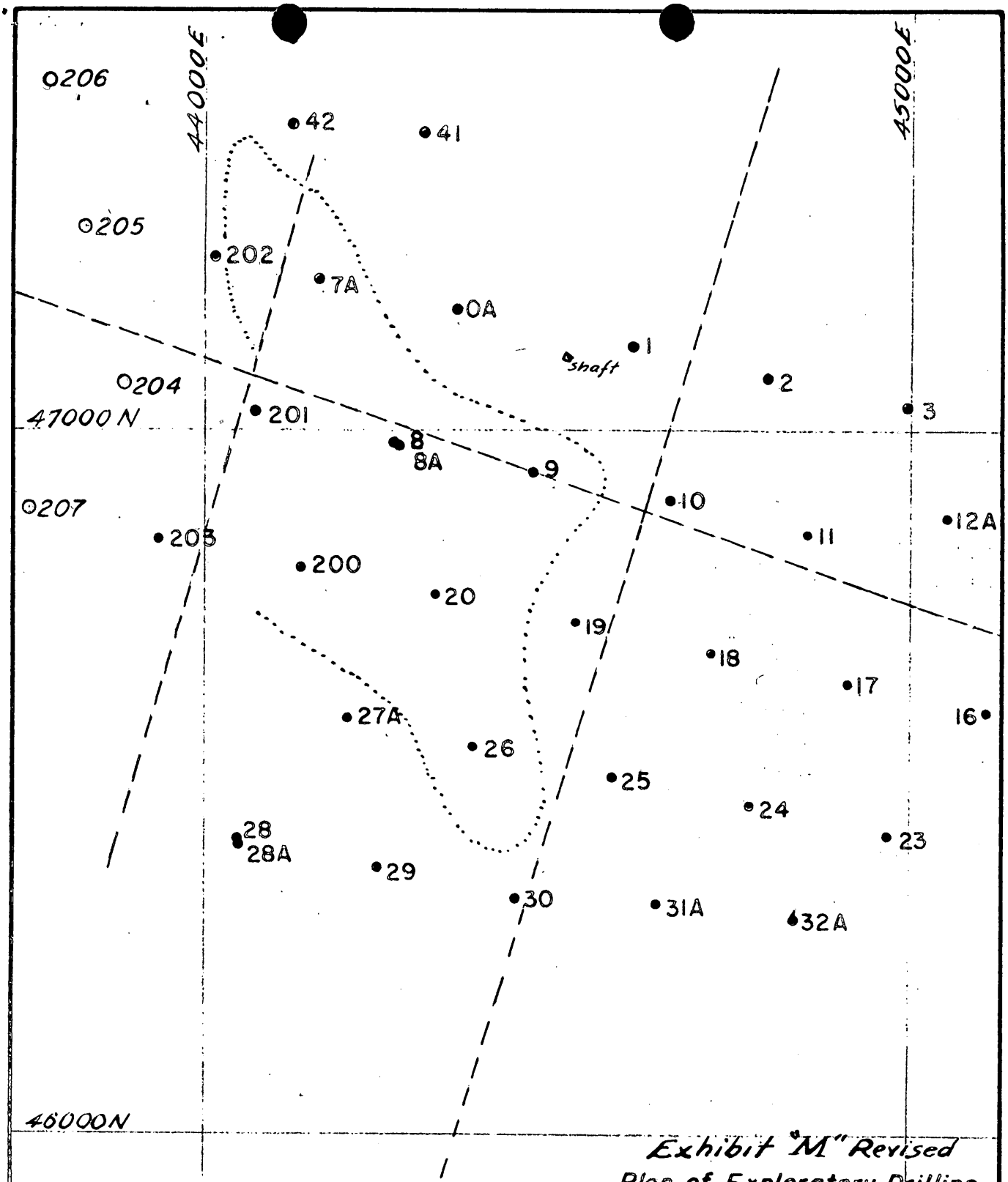


Exhibit "M" Revised
Plan of Exploratory Drilling
COSO URANIUM, Inc.

DMEA 4191
Idm-E 994

LEGEND

• Drill Hole Completed 3-21-1957

o Proposed Drill Hole

Scale: 1" = 200'

B.H.S

EXTRA COPY
D.M.E.A.
RECEIVED APR 30 1957

DATE	INITIALS	CODE

Docket Copy

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 13 1957

DATE	INITIALS	CODE
2/13	C	220
		225

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMEA-4191

Amendment No. 3

It is agreed this 25th day of January, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Coso Uranium, Inc., that Exploration Project Contract Idm-E994, Docket No. DMEA-4191, dated August 21, 1956, as amended, is further amended, as follows:

1. In Article 13 of the Contract, add the following:

"(f) All bulldozer work under the contract shall be performed with a D-7 Caterpillar tractor or equivalent unit."

2. In Amendment No. 2, Exhibit "A," the following changes are made:

(a) Under the heading Description of the Work, in Stage I, on page 2, the second paragraph which begins with the words "Not in excess of 400 samples ..." is revised to read as follows:

"Not in excess of 402 samples shall be chemically analyzed for their U_3O_8 content under this Stage of the Contract."

(b) Under the heading Estimated Costs of Project, Actual Costs, in Stage I, Category (7) Miscellaneous, on page 3, the figures "400" and "$1,400.00" are changed, respectively, to "402" and "$1,407.00".

(c) Under the heading Estimated Costs of Project, Actual Costs, Stage I, the figure "$10,808.00" as the Estimated Total Cost - Stage I, is changed to "$10,815.00".

(d) The SUMMARY is revised to read as follows:

"SUMMARY

Estimated Total Cost - Stage I	$10,815.00	
Estimated Total Cost - Stage II	12,955.00	
Estimated Total Cost - Stage III	6,955.00	
Estimated Total Cost of Project		$30,725.00
Government Participation @ 75% (rounded)		$23,044.00"

This amendment shall not be construed to increase the fixed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O O Mitchell
Administrator, Defense Minerals
Exploration Administration

Indritz 1/14/57
Mayer
Propes Sol. Off.
Murphy
Chambers
Selfridge
Johnson

COSO URANIUM, INC.

By O O Mitchell

Title President

Docket Copy
OFFICIAL FILE COPY
DMEA
RECEIVED JAN 7 1957
DATE | INITIALS | CODE

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMEA-4191

AMENDMENT NO. 2

It is agreed this 21st day of December, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Coso Uranium, Inc., that Exploration Project Contract Idm-E 994 (Docket No. DMEA-4191), dated as of August 21, 1956, is hereby further amended as follows:

EXHIBIT "A"

Description of the Work

General Provisions:

Paragraph 1: The words "rotary drilling" are substituted for "churn drilling."

Paragraph 3: In the first line, delete the word "churn" and, in the second line, substitute "five-foot" for "two-foot."

Paragraph 4: Change to read: The holes shall be drilled using not less than 4-1/4 inch standard bit, through the Coso lake sediments and approximately one foot into the underlying granite. The holes are to be drilled dry by rotary drill using air to return the cuttings to the surface and a Duclone type separator for sample collection. Wet drilling can be substituted in exceptional cases upon written approval by the Government.

Stage I:

Delete all paragraphs under Stage I, page 2, and substitute as follows:

Stage I shall consist of drilling not in excess of 28 holes designated DH0 to DH3 inclusive, DH7 to DH13 inclusive, DH15 to DH20 inclusive, and DH22 to DH32 inclusive, at the approximate locations shown on the map titled 'Exhibit M' attached hereto and made a part of this Contract.

Not in excess of 400 samples shall be chemically analyzed for their U_3O_8 content under this Stage of the Contract.

It is estimated that 4200 feet of drilling will be required to complete the twenty-eight (28) holes. If more than 4200 feet of drilling is required, additional footage may be drilled to complete the holes upon transferring to this work part of the funds provided under Stage III, Item 5, and correspondingly reducing the funds available for work under said Item 5, Stage III. If wet drilling is required, thereby increasing the drilling cost, a maximum of $0.25 per foot of additional cost may be allowed upon transferring to this Stage part of the funds provided under Stage III, Item 5.

Estimated Costs of Project

Actual Costs

Stage I:

Delete all of the items under Stage I, page 4, and substitute as follows:

Category (1) Independent Contracts

Rotary drilling, 4200 feet at $2.00/ft. (Average cost per foot including full-time services of geologist supervisor)	$8,400.00

Category (2) Personal Services:

Included in cost under Category (1)

Category (3) None

Category (4) Operating Equipment:

Subcategory (a) Dozer rental; preparation of drill sites - 63 hours at $16.00/hr.	$1,008.00	

Categories (5) and (6) None

Category (7) Miscellaneous:

Chemical analyses for U_3O_8 content of 400 samples at $3.50/sample	1,400.00	
Estimated Total Cost - Stage I		$10,808.00

Change Summary Estimated Total Costs, page 5, to read as follows:

S U M M A R Y

Estimated Total Cost - Stage I	$10,808.00	
Estimated Total Cost - Stage II	12,955.00	
Estimated Total Cost - Stage III	6,955.00	
Estimated Total Cost of Project		$30,718.00
Government Participation at 75% (rounded)		$23,039.00

This Amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By _____
S. Ricker
Executive Officer
DMEA Field Team, Region II

COSO URANIUM, INC.

By _____

Title President

"DOCKET COPY"

[illegible]
[illegible], [illegible].
[illegible] No. [illegible]-1191

AMENDMENT No. 1

It is agreed this 23rd day of October, [illegible], between the United States of America, acting through the Department of the Interior, Bureau of Mines, Exploration and Production, and Geo [illegible], Inc., that Exploration Project Agreement [illegible] (Docket No. [illegible]-1191), dated as of August 21, [illegible], is hereby amended as follows:

1. The time for starting work, specified in Article 3 of the Contract, is extended from [illegible]ber 1, [illegible] to January 2, [illegible].

2. The time for completion of the work, specified in Article 3 of the Contract, is extended from July 1, [illegible] to October 1, [illegible].

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE [illegible]

By [illegible]
[illegible]
Executive Officer
[illegible] Field Team, Region II

GEO [illegible], INC.

By [illegible]

Title President

Docket Copy

RECEIVED
OCT 31 1956
D.M.E.A.

MF-200
(Revised June 1954)

Docket No. DMEA 4191

Commodity Uranium

Contract No. Idm-E 994

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this AUG 21 1956 day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Coso Uranium, Inc., a California corporation, whose mailing address is 2485 American Avenue, Long Beach 6, California, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and 2 maps (Figures 2 and 5)

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of California, County of Inyo, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Owner of [5] entire interest in unpatented lode mining claims in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] ..... recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: None

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium. The work to be performed is described in Exhibit "A." The Operator on or before November 1- 1956 shall commence the work, and on or before July 1, 1957 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) [redacted] See Article 13.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $30,725.00. The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $23,044.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; [redacted] See Article 13.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. See Article 13.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. **See Article 13.**

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *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 a sufficient final report and final account (see Article 7) has been rendered, 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, within 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 crude 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 therof 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 (1½) 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 (½)

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 (1½) percent; on an amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *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.

(h) *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.

(i) *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 production operations.

(j) *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.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—

(a) In Article 3, the words following the reference to Article 10 are deleted, and the following words are substituted: "shall have completed the work."

(b) In Stage I, Categories (3) through (6) of Article 6(a) are deleted, and the phrase "the estimated cost of each unit of work" in Category (1) of Article 6(a) shall be construed to mean, for the purposes of this Contract: "the average cost per foot of drilling."

(c) In Article 6(a), that part of the last sentence in the first paragraph beginning after the semicolon is deleted.

16—70617-1

(d) In Stage II and Stage III, all costs set forth in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project and are in lieu of the actual costs that otherwise would be allowable under Stage II and Stage III of the Contract. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the Contract.

(e) In Article 6(c), the words "Article 9" are changed to "Article 8."

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mitchell Dorr
Administrator, Defense Minerals
Exploration Administration

COSO URANIUM, INC.
(Operator)

By W. O. Merritt

Title President

Indrity 8/15/56
Dwyer
"Appd. Col. Off."
Murphy
Ellis
Chambers
Selfridge
Johnson

I, WM. J. JANS, certify that I am the secretary of the corporation named as Operator herein; that W. O. MERRITT who signed this contract on behalf of the Operator, was then President 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.

Wm. J. Jans

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—70617-1

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMRA-4191

ANNEX I

The land referred to in Article 2 of the Contract consists of twenty-three (23) contiguous unpatented lode mining claims. The notices of location of the claims are recorded in the Office of the County Recorder, Inyo County, California, as follows:

Claim	Original Recording Book	Original Recording Page	Amended Recording of May 3, 1955 Book	Amended Recording of May 3, 1955 Page
White Swan No. 1	69	538	72	3
White Swan No. 2	69	539	72	4
White Swan No. 3	69	540	72	5
White Swan No. 4	69	541	72	6
White Swan No. 5	69	663	72	161
White Swan No. 6	69	665	72	163
White Swan No. 7	69	667	72	165
White Swan No. 9	69	671	72	158
White Swan No. 10	69	672	72	159
Linda Sue No. 1	69	543	72	7
Linda Sue No. 2	69	545	72	9
Linda Sue No. 3	69	547	72	11
Linda Sue No. 4	69	549	72	13
Linda Sue No. 5	69	551	72	15
Helen Faith No. 1	69	593	72	27
Helen Faith No. 2	69	595	72	29
Helen Faith No. 3	69	597	72	31
Helen Faith No. 4	69	599	72	33
Helen Faith No. 5	69	601	72	35
Esther No. 1	69	605	72	17
Esther No. 2	69	607	72	19
Esther No. 4	69	611	72	23
Esther No. 5	69	613	72	25

The claims are situated in secs. 24 and 25, T. 20 S., R. 37 E., and in secs. 24 and 25, T. 20 S., R. 37½ E., M.D.B. & M., Inyo County, California. The approximate locations of the claims, excepting Helen Faith Nos. 4 and 5, are shown on the map entitled "Claim Map, Coso Uranium Property, Inyo County, California - Figure 5," attached hereto and made part hereof.

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMSA-4191

EXHIBIT "A"

Description of the Work

General Provisions:

The object of the project is to explore for uranium ore deposits in the Coso lake beds of Pliocene-Pleistocene age. The work shall consist of churn drilling, shaft sinking, drifting, crosscutting, and raising.

A competent supervisor shall be employed full time to assist in the performance of the work under the Contract.

During the churn drilling, the material penetrated shall be extracted and tested radiometrically after each two-foot drive. If the material tested shows significant radioactivity, it shall be split for sampling purposes. The Operator shall have one-half of each such sample chemically analysed for its U_3O_8 content, and store the other half, properly identified as to drill hole number and depth represented, for Government use.

The holes shall be drilled, using not less than standard 6 inch casing, through the Coso lake sediments and approximately 1 foot into the underlying granite.

The shaft, drifts, crosscuts, and raise shall be adequately timbered as necessary.

The walls, back, floor, and face of each new advance in the shaft, crosscuts, drifts, and raise shall be tested radiometrically. Sections of these openings that show significant radioactivity shall be sampled at intervals of not less than 5 feet. The samples shall be split. The Operator shall have one-half of the sample chemically analysed for its U_3O_8 content and shall store the remainder, properly identified, for Government use.

Copies of all assay certificates shall be submitted with the Monthly Progress Report (see Article 7).

The locations, extent, and method of performing the work under this Contract are subject to Government approval.

The work shall be divided into three stages. The Operator shall perform all the Stage I work and so much of the other stages as is approved in advance in writing by the Government.

Stage I

Stage I shall consist of drilling not in excess of nine (9) churn drill holes at the approximate locations shown on the map entitled "Figure 2, Coso Uranium Property ...," as follows:

1. One hole at intersection of coordinates N 47180, E 44840;

2. Five holes, the first hole at intersection of coordinates N 47040, E 44650, and the other four holes at intervals of approximately 150 feet on a bearing of S 15° W. from the first hole in this Item 2; and

3. Three holes, the first hole at intersection of coordinates N 46750, E 44780, and the other two holes at intervals of 150 feet on a due east bearing from the first hole in this Item 3.

Not in excess of 120 samples shall be chemically analyzed for their U_3O_8 content under this Stage I of the Contract.

It is estimated that 1,850 feet of drilling will be required to complete the nine (9) holes. If more than 1,850 feet of drilling is required, additional footage may be drilled to complete the holes upon transferring to this work part of the funds provided for raising (Item 5, Stage III) and correspondingly reducing the funds available for work under said Item 5, Stage III.

Stage II

The approximate location of Stage II work is shown on map Figure 2. The work shall be divided into three parts as follows:

Item 1 - In Area 8, extend the existing 65-foot inclined shaft by sinking approximately 50 feet to reach the floor contact of the Coso lake beds and the underlying granite formation. If more than 50 feet of shaft sinking is required to reach the contact, additional footage may be sunk upon transferring to this work part of the funds provided for in Item 5, Stage III, and correspondingly reducing the funds available for work under said Item 5, Stage III.

The shaft shall have one skip and one manway compartment and shall be not less than 4 feet 6 inches by 7 feet 6 inches in cross section clear of the timber (including the width of the dividing timber between the compartments).

Item 2 - In Area 2, starting at the intersection of coordinates N 46000, E 45070, drive a crosscut, not to exceed 200 feet in length, in a due east direction following as close as practical the Coso lake bed granite contact.

The crosscut shall be not less than 5 feet by 7 feet in cross section clear of the timber.

Item 3 - In Area 8, starting from the shaft (Item 1) drive a drift, not to exceed 200 feet in length, in a southerly direction following as close as practical the Coso lake bed granite contact.

The drift shall be not less than 5 feet by 7 feet in cross section clear of the timber.

Not in excess of 6 samples from the shaft (Item 1), nor more than 20 samples each from the crosscut (Item 2) and the drift (Item 3), shall be chemically analyzed for their U_3O_8 content under this Stage II of the Contract.

<u>Stage III</u>

The approximate location of Stage III work is shown on map Figure 2. The work shall be divided into two parts as follows:

Item 4 - In Area 2, drive not in excess of 100 feet of drifts in either or both a north-south direction, to further explore mineralized zones encountered by the crosscut Item 2. The drift or drifts shall be not less than 5 feet by 7 feet in cross section clear of the timber.

Item 5 - In Area 8, at the south end of drift Item 3, drive a vertical raise not to exceed 150 feet in length, to explore the upper horizons of the Coso lake beds.

The raise shall have a chute and a manway compartment and be not less than 4 feet 6 inches by 7 feet 6 inches in cross section (including the width of the timber between compartments).

Not in excess of 10 samples from the drift or drifts (Item 4) and 20 samples from the raise (Item 5) shall be chemically analyzed for their U_3O_8 content under this Stage III of the Contract.

Estimated Costs of Project

Actual Costs

Stage I

Category (1) Independent Contracts

Churn drilling, 1,850 feet (average cost per foot)	@ $5.00/ft.	$9,250.00	

Category (2) Personal Services

Subcategory (a) Supervision

1 Supervisor,	2 months @ $500.00/mo.	1,000.00	

Categories (3), (4), (5), and (6)	None	-	

Category (7) Miscellaneous - None except

Payroll tax and insurance on supervisor's salary (surface work)	@ 9.5%	95.00	
Office expenses,	2 months @ $25.00/mo.	50.00	
Chemical analyses for U_3O_8 content of 120 Samples	@ $3.50/sample	420.00	
Estimated Total Cost - Stage I			$10,815.00

Fixed Unit Costs

Stage II

Item 1 - shaft sinking in Area 8: 50 feet of incline shaft	@ $40.40/ft.	$2,020.00
Item 2 - crosscutting in Area 2: 200 feet of crosscut	@ $24.40/ft.	4,880.00
Item 3 - drift from bottom of shaft (Item 1, Area 8): 200 feet of drift	@ $29.40/ft.	5,880.00

Chemical analyses for U_3O_8 content of 50 Samples	@ $3.50/sample	$ 175.00	
Estimated Total Cost - Stage II			$12,955.00

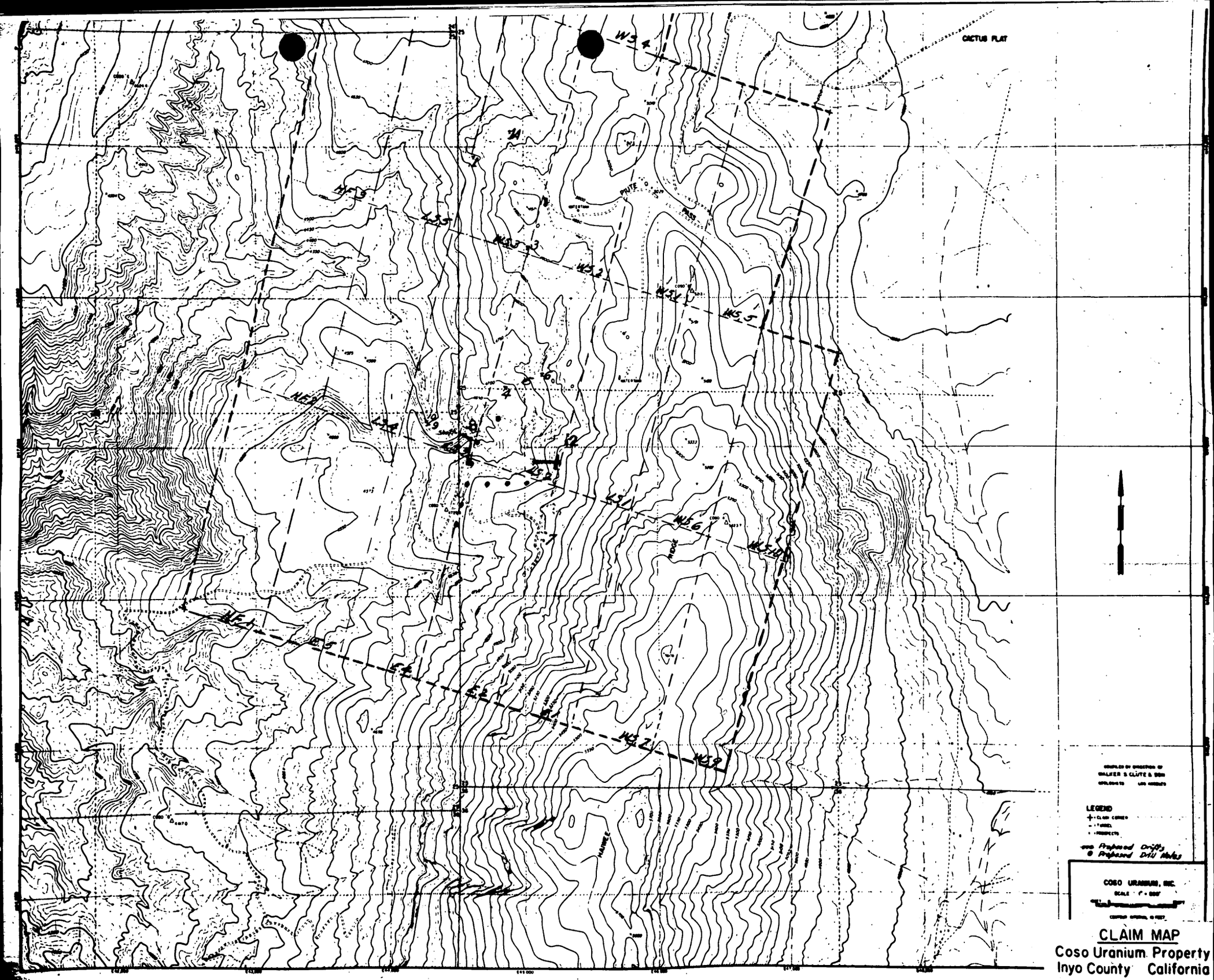
Fixed Unit Costs

Stage III

Item 4 - drifts from crosscut (Item 2, Area 2): 100 feet of drifts	@ $24.40/ft.	$2,440.00	
Item 5 - raise from south end of drift (Item 3, Area 8): 150 feet of raise	@ $29.40/ft	4,410.00	
Chemical analyses for U_3O_8 content of 30 Samples	@ $3.50/sample	105.00	
Estimated Total Cost - Stage III			$ 6,955.00

S U M M A R Y

Estimated Total Cost - Stage I	$10,815.00	
Estimated Total Cost - Stage II	12,955.00	
Estimated Total Cost - Stage III	6,955.00	
Estimated Total Cost of Project		$30,725.00
Government Participation @ 75% (rounded)		$23,044.00



CLAIM MAP
Coso Uranium Property
Inyo County California

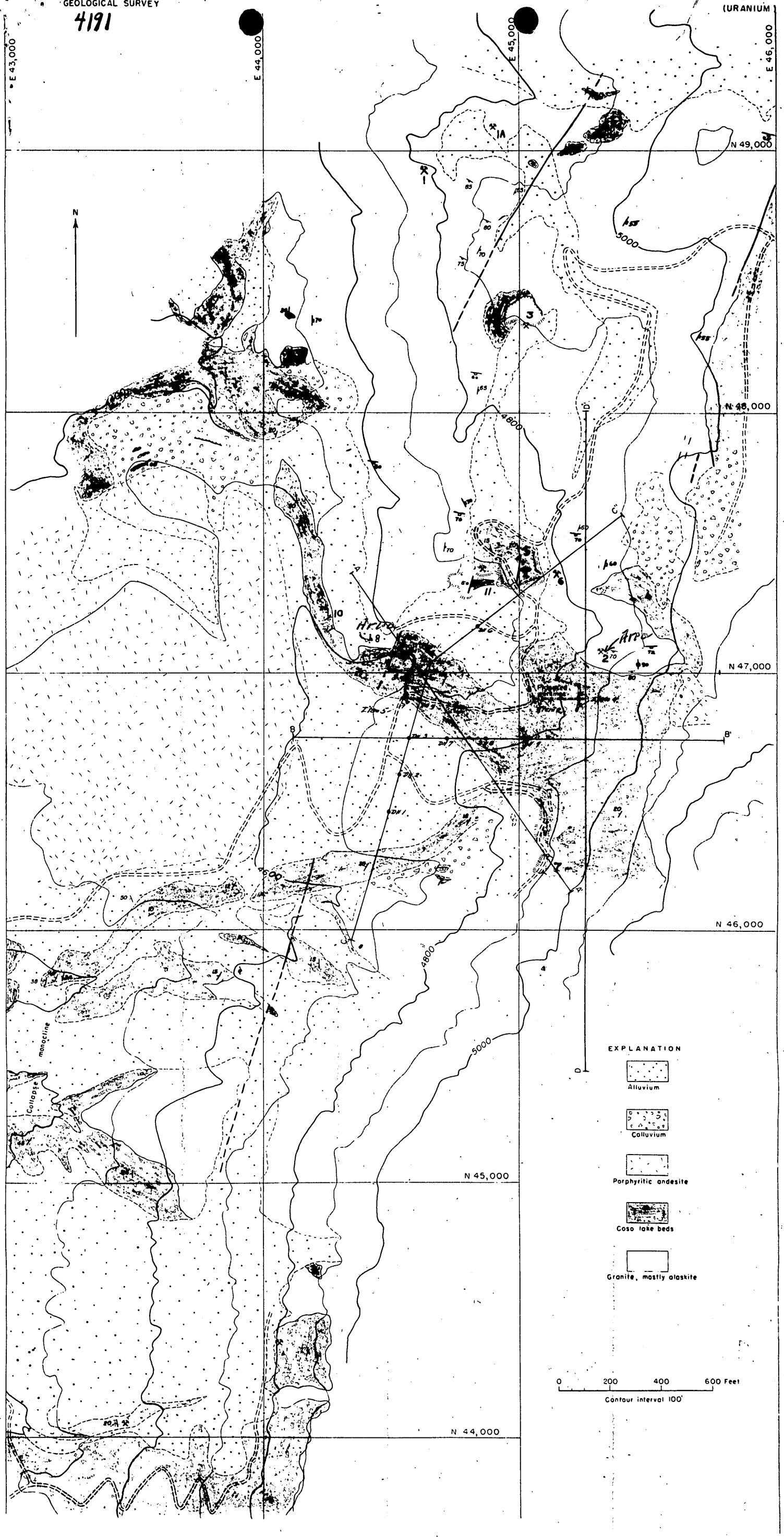
4191

Figure 5

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

4191

DMEA 4191
(URANIUM)



COSO URANIUM PROPERTY, INYO COUNTY, CALIFORNIA

Figure 2

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

RECEIVED
FEB 23 1956

1605 Evans Avenue
Reno, Nevada

February 21, 1956

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application - Uranium
Coso Uranium, Inc.
Inyo County, California

Attached are three sets of MF-103, Application for Aid forms, relative to above subject. The fourth set has been retained in our files.

S. Ricker

Attach.

Copy No. 1,
of 8 copies.

RECEIVED
FEB 28 1958

Copy No. 1, of 8 copies.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
FEB 23 1956

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

Not to be filled in by applicant

Docket No. DMEA 4191
Metal or Mineral Uranium
Date Received 2/23/56
Estimated Cost $100,100.00
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address:

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

(*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. See Page 1 of Accompanying Papers.

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

See Page 3 of Accompanying Papers.

(*b*) State any mine name by which the property is known. Coso Uranium See Accompanying Papers;

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Company is the owner, by assignment, of 23 mining claims.

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

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

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

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

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

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

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

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

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Uranium ores, particulary uraninite.

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

(*c*) The work will start within 20 days and be completed within 2½ 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 Accompanying Papers.

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper. See Pages 19 and 20 of Accompanying Papers.

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 Feb. 20, 1956

Coso Uranium, Inc.
(Applicant)

By W. Dillwith President

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

Copy No. 1, of 4 copies.

RECEIVED
FEB 23 1956

Part 1. Name of Applicant.

(a) Coso Uranium, Inc., 2485 American Ave., Long Beach 6, California. (Phone, Garfield 7-8921).

(b) A California corporation, organized May 2, 1955.

(c) Officers of Company, their names and addresses:-

W. Ormond Merritt, President
2485 American Avenue
Long Beach 6, California

William Kinley, Vice President
12th Floor Security Building
1st & Pine Streets
Long Beach, California

Harry L. Lee, Treasurer
2485 American Avenue
Long Beach 6, California

William J. Jans, Secretary
2485 American Avenue
Long Beach 6, California

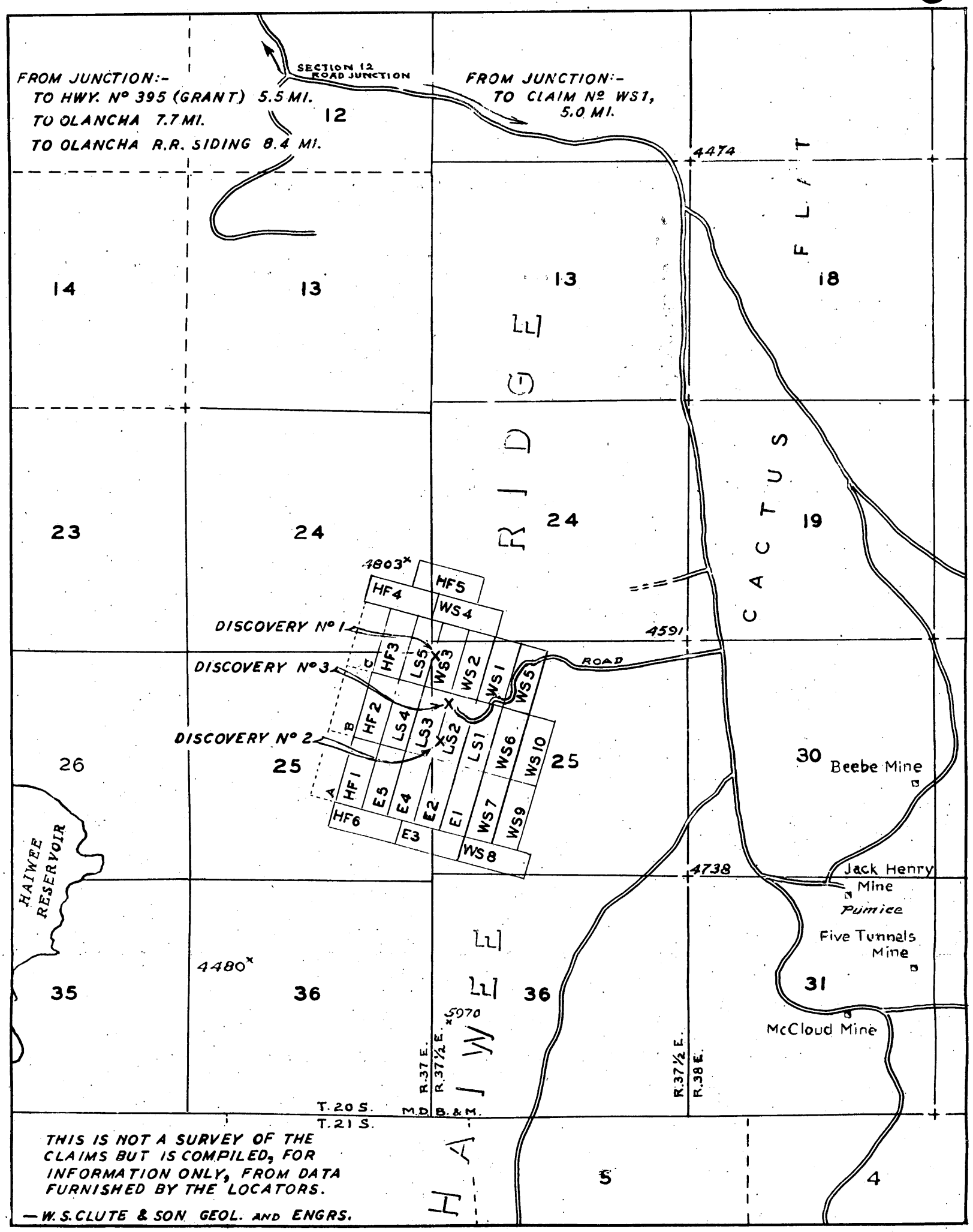
Part 2. General.

This Application for Aid in an Exploration Project is being filed, with accompanying papers, in quadruplicate, with:-

Defense Minerals Exploration Administration, Region II
1605 Evans Avenue
Reno,
Nevada

Attention: Mr. S. Ricker,
Executive Officer

Date of this Application, January 15, 1956.



CLAIMS MAP

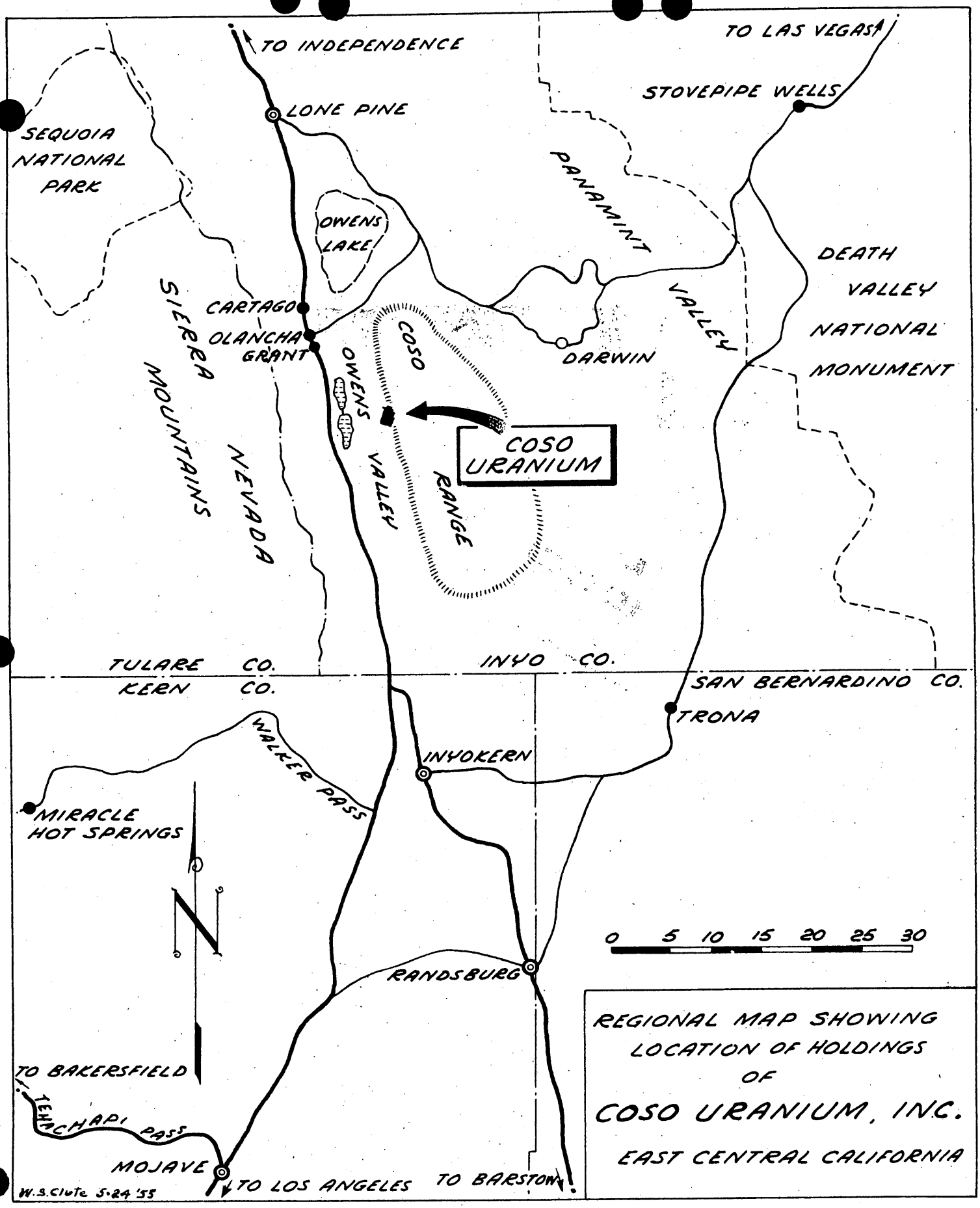
SHOWING HOLDINGS OF

COSO URANIUM, INC.,

INYO COUNTY, CALIFORNIA

AS OF MAY, 1955

FEB 23 1956



REGIONAL MAP SHOWING LOCATION OF HOLDINGS OF

COSO URANIUM, INC.

EAST CENTRAL CALIFORNIA

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

RECEIVED
FEB 23 1956

Part 3. Applicant's Property Rights.

Legal Description of Land:-

Reference is made to accompanying map, page 2-A, which is a portion of U.S.G.S. topographic sheet, part of Haiwee Reservoir quadrangle, 15-min. series, Calif. This map shows the geographic location, roads, railroad, elevations, etc.

(a) Legal Description: - ~~26~~ 23 unpatented mining claims (less 3 claims subsequently relinquished) located in Secs. 24 and 25, T 20 S., R 37 E., and in adjoining Secs. 24 and 25, T. 20 S., R. 37½ E., MDB & M, Inyo County, Calif., as per Claims Map accompanying this application.

(b) Mine name: - Coso Uranium

(c) Interest in the land: - Owner of 23 unpatented mining claims, acquired from locators.

(d) Company is owner of claims; no royalty or rental is due to locators or any other parties.

(e) Owner of claims; no encumbrances.

(f) Unpatented claims, book and page number for each recorded location notice: - see list on Page 3-A following.

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

List of Book and Page Number
for Each Unpatented Claim
as Recorded in Records of Inyo County, Calif.
County Court House, Independence, Calif.

		Recorded in Book	Recorded in Page	As of May 3, 1955 Recorded in Book	As of May 3, 1955 Recorded in Page
1.	White Swan No. 1 Mining Claim	69	538	72	3
2.	White Swan No. 2 Mining Claim	69	539	72	4
3.	White Swan No. 3 Mining Claim	69	540	72	5
4.	White Swan No. 4 Mining Claim	69	541	72	6
5.	White Swan No. 5 Mining Claim	69	663	72	161
6.	White Swan No. 6 Mining Claim	69	665	72	163
7.	White Swan No. 7 Mining Claim	69	667	72	165
~~8.~~	~~White Swan No. 8 Mining Claim~~	~~69~~	~~669~~	~~72~~	~~167~~
9.	White Swan No. 9 Mining Claim	69	671	72	158
10.	White Swan No. 10 Mining Claim	69	672	72	159
11.	Linda Sue No. 1 Mining Claim	69	543	72	7
12.	Linda Sue No. 2 Mining Claim	69	545	72	9
13.	Linda Sue No. 3 Mining Claim	69	547	72	11
14.	Linda Sue No. 4 Mining Claim	69	549	72	13
15.	Linda Sue No. 5 Mining Claim	69	551	72	15
16.	Helen Faith No. 1 Mining Claim	69	593	72	27
17.	Helen Faith No. 2 Mining Claim	69	595	72	29
18.	Helen Faith No. 3 Mining Claim	69	597	72	31
19.	Helen Faith No. 4 Mining Claim } not on map	69	599	72	33
20.	Helen Faith No. 5 Mining Claim } " " "	69	601	72	35
~~21.~~	~~Helen Faith No. 6 Mining Claim~~	~~69~~	~~603~~	~~72~~	~~37~~
22.	Esther No. 1 Mining Claim	69	605	72	17
23.	Esther No. 2 Mining Claim	69	607	72	19
~~24.~~	~~Esther No. 3 Mining Claim~~	~~69~~	~~609~~	~~72~~	~~21~~
25.	Esther No. 4 Mining Claim	69	611	72	23
26.	Esther No. 5 Mining Claim	69	613	72	25

- 3
23

# # #

Part 4. Physical Description. -

4(a). Work is being conducted at this time on the property to the extent of removing surface secondary ore. It is intended to explore deeper -- to a depth of 300 or 500 feet -- in search of primary ores which, geological evidence shows, may very well exist beneath the present deposits.

The property has been in operation since about September 1955. Approach roads have been opened up, a field office and lab have been established in trailers. Equipment including trucks, drills, compressors, water tanks, steel, powder and supplies have been purchased and have been in use constantly. Geiger counters, a radiometric scaler, small crusher and pulverizer are part of the laboratory facilities.

A detailed contour map of the property (contour interval 10 feet) has been completed and the surface geology is now being mapped, on a scale of 200 feet to the inch. A radiometric map is likewise being prepared.

The exploratory work accomplished to date in the nature of opening up the formations at the surface consists of the following:-

1. Open cut at Location 1; about 10 cubic yards of rock blasted out in order to follow down on a thin vertical vein of impure pitchblende; country rock, fractured granite. Work suspended.

2. Open cut at Location 2; about 300 tons of granite blown and quarried out of hillside face, of which about 75 tons were stockpiled and shipped, expected to average .15% U_3O_8 or better.

3. Location 3; a prospect, high Geiger count at local granite-breccia conglomerate contact.

4. Location 4; a prospect, high Geiger count in granite.

5. Location 5. Tunnel into hillside approximately 60 feet; about 25 tons of ore removed and shipped from granite-gravel contact, expected to assay average .12% U_3O_8.

6. Location 6, a vertical fissure in granite, opened up as recommended by A.E.C. officials but not productive. Work suspended. Will core-drill.

7. Locations 7A and 7B; two tunnels each 35 feet, in granite. Not productive; work suspended.

8. Locations 8A and 8B; two tunnels. Tunnel (or adit) 8A is slightly inclined into lake bed material about 400 feet. Tunnel 8B is level into lake bed material about 40 feet. From these two, approximately 200 tons of ore were removed and shipped to average about .12% U_3O_8.

9. Location 9; a hillside cut or short tunnel in lake bed material. High radiometric count, but ore in small pods or lenses. Will core drill before tunneling further.

10. Location 10; a hillside tunnel similar to Location 9.

11. Location 11; a hillside tunnel similar to Locations 9 and 10.

Reference is made to attached maps showing the locations.

The workings described above are all readily accessible by auto road, except Location 2 which is on steep hillside 50 feet above road.

Property is reached by dirt road (all year road) 14 miles from Olancha and Grant, see Map Page 2-A.

4(b). Past and current production. — The production to date consists of 6 cars of ore shipped to the A.E.C., Salt Lake City area, December 20 to 24, 1955. The results, tests and disposal of the ore shipments have not been learned by the Company to date. The ore consists of uranophane in two kinds of country rock -- granite, and lake bed material. The average combined grade of the 6 cars is expected to be about 0.125% U_3O_8.

4(c). Outline of Geologic Features and Mineralization. (See Geological Report beginning page 9) -- The Coso Range is essentially a granite mass, and in the locality of the Coso Uranium holdings the granite has been intricately broken. The so-called Haiwee Ridge is an up-tilted fault block, and in the western portion of the claims there is an area of extruded lava which quite evidently emanated from a vent; these circumstances are recited to indicate briefly the profound nature of the fracturing. In addition, there is a mantle of Pleistocene lake bed material which reaches from the floor of Owens Valley part way up the slope of Haiwee Ridge, lying directly upon the granite. However much of the mineralized granite has no lake bed overburden. Where excavations now permit the contact to be observed, it is found that the lake bed material (gravel, sand, pumice) lie upon an old eroded surface, which surface is very irregular; and the granite is found to be in a

disintegrated state at the contact. Below the disintegrated zone the granite becomes more dense and solid, although the fracturing continues downward so far as has been observed.

The mineralization -- the uranium ore -- is found in three types of occurrence; first, within the lake bed material, in the sand or gravel and along fault planes which cut the beds of gravel, or in fault gouge; second, in places along the contact of the lake beds with the underlying granite, where the ore is found haphazardly in the clastic materials above the contact and in the granite below; and third, in various locations in fractured granite where there is no overburden or cover except a light soil.

The granite is strongly cross-fractured at right angles to its flow lines, and it is also split by cracks and crevices which are, in turn, normal to the flow lines and cross-fractures. The major breaks and vertical fractures are due to shearing or splitting apart along lines and planes of fault movement. Perhaps the lesser partings are due both to strains set up within the magma upon cooling, and also to breaking when the cooled granite was later subjected to considerable dislocation.

In the cases where the mineralization is in the granite without overburden, the uranophane is found in the crevices between the flat faces of the blocks of granite, and the uranophane also impregnates the granite itself to more or less extent. The crevice-material is in paper-thin layers between the faces of the blocks - a vein-filling cement of small volume which assays up to 3% or 4% U_3O_8. The enrichment of the impregnated granite without including such crevice-material is such that the granite sometimes assays .20% to .28%, but may run anywhere from .05% to .40%.

Assays, Sampling and Testing -- During the development work between June 1955 and January 1956, many assays have been made (perhaps 50 or 60 assays) by Ed Eisenhauer, Jr., of Los Angeles and by Smith-Emery Company of Los Angeles, and one by Brown Laboratories of Grand Junction, Colorado. Samples of ore, which were of course sufficiently large to be representative of the particular location of stock-pile under consideration, were taken to those laboratories for both chemical assay and radioactive determination. In some cases spectographic analyses were made.

With this report are photocopies of 10 assay certificates by Smith-Emery Company, and a certificate by Ed Eisenhauer listing a group of 8 assays.

The uranium ore in the surface workings of the property consists of:-

1. Uranophane (a calcium uranium silicate), predominant ore.
2. Autunite (a calcium uranium phosphate), scarce occurrence, if any.
3. In one locality, torbernite (copper-uranium phosphate).
4. Trace, impure pitchblende - several ounces from Location No. 1.

5. There is a small occurrence of what is believed to be a calcium-uranium-sulphate, identity not determined; and likewise a silicate, not identified. There is also a lime or gypsum incrustation colored a brilliant yellow by a uranium salt, occurring at Location 7.

6. Carnotite is deemed to be absent; chemical analyses thus far do not show presence of appreciable amounts of vanadium.

Determinations of the uranium minerals have been made by Dr. Thos. Clements of U.S.C.; Dr. Douglas Campbell of Cal. Tech.; Mr. T. C. McBurney, Spectro-physicist for Smith-Emery Co.; and Dr. Murdock of U.C.L.A. An accompanying assay map of the property will show the assays of the ore from cuts at Locations 1, 2, and 5, etc.

Sampling of ore and testing on the property (without taking samples to commercial laboratories) is confined to radiometric determination. A Hoffman Geiger scaler is employed to obtain the count, and the corresponding percentages of U_3O_8 content are read from a curve constructed for this purpose in which the count with this particular instrument has been plotted against percentage determinations (chemical) in standard samples. The curve is being revised and adjusted according to the chemical assays of "standard" samples of ore mined from this property only. In fact, two sets of "standard" samples are being charted — one set of readings from assay-sample-rejects of granite ore; and one set of readings from assay-sample-rejects of lake-bed material ore. This is because there may be a difference in the degree of equilibrium in the two types of ore deposition.

Ore to be tested is sampled either by trenching or by shovelling and/or by chip-sampling. The ore sample is put through a Braun chipmunk crusher; it is then coned and quartered, put through a splitter, and through a Braun pulverizer. The sample is screened to 25 or 50 mesh and finally reduced to 50 mesh for reading in the radiometric scaler.

It will be seen that the exploratory work thus far has been confined to the surface, and nowhere have the tunnels or excavations extended to more than 20 or 25 feet below ground. Core drilling has not been essayed except in one early instance where a 1½-inch hole was put down at an angle to about 80 feet, near present Location No. 5. The core recovery was evidently meager and the Geiger count was not recorded. The principal result was to indicate that the lake bed material was some 80 feet in thickness at that point. Some granite was reported in the core, but the hole bottomed in "sandy material", it was reported.

A core drilling program is planned. Locations are being surveyed at the present time. The drilling pattern will be partly determined by the fissure system mapped in the granite. It is intended to drill a series of holes to at least 250 feet or 300 feet in depth. The holes will be spaced 100 feet apart or closer, and the approximate area to be covered is at least 40 acres. The expected cost of the drilling project will be commented upon in paragraphs to follow.

At the present time, also, a radiometric pattern is being mapped on the topographic base map. Areas of higher radioactive intensity register approximately 1.3 to 2.0 milliroentgens per hour, with occasional locations showing a radioactivity of 2.8 mr per hour. The shear zones are accompanied by anomalies clearly, and show radioactivities of 2.0 or 2.5 mr per hour. The areas of maximum radioactivity will assist in determining the locations for core drilling.

One of the objectives of the development work since September 1955 has been to take out and ship ore of commercial grade in order to make the exploration pay its way so far as possible. As stated previously, six cars of ore were shipped from Olancha to the A.E.C. in December 1955. This ore came from the cuts and tunnels without particular cobbing or sorting and included rock that assayed variously from 0.08% up to 2.2% or 2.5% U_3O_8. At the present time, as tunnels at Location 5 and an inclined shaft at Location 8-B are being driven, similar ore will be stockpiled for shipment. Meantime, the core drilling program will be started and the search for primary ore at depth will be put in operation.

No estimate of reserves can be attempted at this time. No ore has been blocked out. However, it is believed that the wide area over which the locations of high enrichment occur, indicates that there was definitely a source of uranium salts in the granitic magma below, and that the primary ores can be found in the granite, particularly in and adjacent to the principal fractures. On neighboring property it has been found that pseudo-tachylite occurs in a vertical fracture and this probably accounts for the trapping of radioactive minerals in the fissure vein by this volcanic-glass material which cooled and sealed in the ascending solutions.

A detailed geological and engineering report concerning the property and project was written by Walker S. Clute, consulting geologist in Los Angeles, under date of April 25, 1955. Copies of the report are available; but in view of subsequent mining operations on the property and additional information resulting therefrom, the report has undergone some revision. The proposed expenditures and the expected revenues are being reappraised.

Geology, and Occurrence of Ore. -- Description by Walker S. Clute, geologist; January 1956.

The status of geologic mapping on the Coso property at the present time is as follows: -- A topographic map with contours at 10-foot intervals and covering a square mile or more was completed for Coso Uranium, Inc., by Hycon Aerial Surveys, Inc., in December, 1955. A copy of the map is furnished herewith. In January 1956 a geological survey party is mapping the surface geology, the formations involved, and the structural geology on the said topographic map. Detailed geological work, however, is now being confined to about 60 acres. The geological party is using plane table and transit. The details of the fault systems and also the details of the present tunnels and open cuts are being mapped. Progress maps for the tunnels on a large scale of 20 feet to the inch are being prepared. Especially important in the geologic mapping is the fissuring system in the granite, also the major faults in the basement rock, and these features will be discussed later.

The geological party is under the direction of Mr. Conrad Housley, geologist and engineer, a graduate of Calif. Institute of Technology, who has come to this job from a year's work with Thorium, Inc., of Montana.

Mapping the geology also, and working simultaneously, is Dr. Donald Carlisle, professor of economic geology at University of California at Los Angeles. Dr. Carlisle has made examinations of uranium, tungsten, rare earths and other deposits and properties throughout the West.

In December 1955 a geological reconnaissance survey of the Coso property was made by Mr. G. Austin Schroter, mining geologist and engineer of Los Angeles, who is experienced in uranium work on the Colorado Plateau and elsewhere. Mr. Schroter has been consultant for the Kergon mine on Kern River, California. At the Kergon mine, primary ore has recently been encountered at depth, in fissured granite. The purpose of Schroter's inspection of the Coso Uranium property was to advise as to further exploration work. In general, Mr. Schroter's report recommended careful mapping to establish the direction of fissures and possibly to locate a cross-fracturing pattern which will indicate a proper location for core-drilling and/or for sinking a shaft.

The Coso Uranium property has been visited by the following named gentlemen who are authorities on radioactive minerals and uranium mining. The writer has met them on the property and has discussed the uranium possibilities and the geology with them. --

Mr. Dudley Davis, A.E.C., Salt Lake City.
Mr. E. E. Thurlow, A.E.C., Salt Lake City and Grand Junction.
Mr. Harry E. Nelson, A.E.C., Las Vegas.
Mr. Robt. G. Nininger, Washington, D.C. and Grand Junction.

Other representatives of A. E. C. at the property have been Mr. Shirley of Grand Junction and Mr. D. C. Barrett of Las Vegas, although the writer has not had opportunity to discuss matters with them.

Petrographic determinations have been made by Dr. Thomas Clements, head of the Geology Department, University of Southern California. Thin sections have been prepared by Dr. VonHuene at Calif. Inst. of Technology. The property was visited by Mr. T. C. McBurney, chemist and geophysicist for Smith-Emery Company, Los Angeles. Mr. McBurney has made the laboratory determinations or identifications of the uranium minerals when the ore samples have been taken to Smith-Emery to be assayed. McBurney is now listing the various minerals, with a description as to chemical and spectrographic determinations. In regard to assays, it should be said that many samples have been sent to the laboratory of Ed Eisenhauer, Jr., Los Angeles, and certain samples to Brown Laboratory in Grand Junction.

There are no published accounts of the geology of the Coso Range as a whole, either by the U. S. G. S. or by the State of California. The most pertinent accounts, touching upon the western portion of the Range, are:-

Hopper, R. H.; "Geologic Section from the Sierra Nevada to Death Valley, Calif." Bull. Geol. Soc. America, Vol. 58, 1947; Pp 393-432.

Schultz, J. R.; "A Late Cenozoic Vertebrate Fauna from the Coso Mountains, Inyo County, Calif." Carnegie Institute of Washington, Publication 487; 1937; Pp. 75-109.

Knopf, Adolph; and Edwin Kirk. "A Geologic Reconnaissance of the Inyo Range and the Eastern Slope of the Sierra Nevada, Calif." U. S. G. S. Professional Paper 110; 1918.

California Department of Natural Resources, Division of Mines, San Francisco:--Map Sheet No. 11, Geology of Owens River Valley; Sept. 1954, in Bulletin 170, Chapter III.

- - - - - -

The Coso Range comprises the most westerly of the series of north-south faulted Basin Ranges which extend across the state of Nevada and as far west as the Sierra Nevada of California. The Inyo Range would appear to be a northward extension of the Coso Range, or vice versa; but an important distinction should be noted between these two ranges; namely, that whereas the Inyo Range contains a vast expanse of sedimentary formations, ranging from the Cambrian and Ordovician (the area contains Walcott's classic type section of the Cambrian for North America) up through the Paleozoic into the Mesozoic, the Coso Range is devoid of any sedimentaries except a mantle of Pliocene-Pleistocene lake beds around the margin. The rocks of the Coso uplift consist of the various types of granite, aplite, monzonite, pegmatites, etc., also rhyolite and outpourings of andesite and basalt together with quite recent lava flows from vents. Cinder cones, tuff and pumice attest to the volcanic action, and there are active hot springs in localities some 10 to 12 miles southeast of Coso Uranium holdings. Both cinnabar and manganese have been mined, in limited quantities.

Unlike many of the Basin Ranges of Nevada, the Coso Range does not appear to have any of the overthrust element that characterizes those

uplifted blocks. The Coso Range is profoundly faulted, with north-south trending rifts, and comprises a broad range with many summits attaining about the same elevation -- between 7,000 and 8,000 feet. The east margin adjoins the Argus Range, where is located the Darwin mining district.

The west margin of the Coso Range is marked by a sharp, narrow, separate and integrated ridge which has been termed for convenience Haiwee Ridge. A distinct graben valley (4,600 foot elevation) called Cactus Flat lies to the east and separates physiographically the Haiwee Ridge (5,880 feet at the summit) from the main Coso Range to the east. The Coso Uranium property is situated on the summit and on the western slope of Haiwee Ridge; consequently the Study of the geology is confined to this area.

Haiwee Ridge has a core of granite, and the westerly slope of the granite is overlain in part by a blanket of lake-bed material — or at least such remnants of lake-bed material as still cling to the very steep granite slopes. The steep east side of the Haiwee Ridge represents a fault scarp where the displacement downward toward the east would be measured in many hundreds of feet. The lake-bed sediments that lie up against the west slope and extend out westerly into the valley are the lacustrine deposits of a large Pleistocene body of water that occupied the ancestral Owens Valley. They are named the Coso Lake Beds. An uplift of Haiwee Ridge (and Coso Range) in a late Pleistocene orogeny tilted the lake beds to high angles, and created folds, faulting and dislocations in the clastic material. The same faultings extend down into the underlying granite — at least on the flanks of Haiwee Ridge where the structure can be observed. The well-stratified and colorful lake deposits depict the faults much more clearly than does the granite. The granite itself is crossed and re-crossed with planes of jointing, with cross-fractures and fissures, with faults and laminations, not to mention surface exfoliation and splitting due to frost and weathering. The more prominent jointing is that which trends about N. 22 deg. E.; but at unexpected local places the jointing at right angles thereto becomes decidedly the more emphatic and distinct.

The granite is cut in places by minor quartz veins; but there are not any profound intrusions of pegmatite dikes or aplite dikes in the area in question. The granite generally is light colored and acidic. Typical specimens have been identified as Alaskite by Dr. Thomas Clements (1955). A batholithic environment is indicated by the coarse grained texture and the absence of rhyolite.

Extrusive lava in the form of a plug is present in the immediate vicinity of the workings on the Coso property, and is important in the consideration of the geologic structure and mineralization. An outflow of the spongy lava occupies a large area at the base of the slope in the west side of the property, and was quite evidently extruded from a vent in the granite (along a fault line?) up through the overlying lake beds. The adjacent strata were much broken and displaced. Fragments of other lava float are also found nearly at the summit of Haiwee Ridge, although the vents or points of emission have not yet been located.

The Coso lake beds lie upon an old eroded granite surface. Tunnels recently dug down into the lake beds to find ore at the contact disclose that the ancient granite surface was substantially as rough and as highly irregular as the present exposed granite all about on the hillsides today. Moreover, the old surface was quite disintegrated; the granite now buried but encountered

when digging to the contact has a rotted appearance, and is unconsolidated so that it falls apart like the accompanying lake-bed sands and gravels. This softer granite and the clastic material are both enriched with the uranium minerals in many places.

The writer recognizes another distinct or characteristic formation --- a very coarse breccia composed of detrital and debris washed down from high slopes. This is the kind of material that gathers at the base of a steep mountain side. (A present-day counterpart material is seen along the base of the Sierras on the west side of Owens Valley near Olancha.) The stones comprising the breccia are not water-worn --- they are angular, both large and small (some are 2 or 3 feet across), and nearly all are granite. The material is not fanglomerate though it probably gathered on land rather than in water. Sand and gravel and round boulders fill the interstices, and at present the entire breccia is cemented very solidly. It is dark brown as though it were cemented and colored by iron oxides, and it is also blackened in places by manganese stain. (Incidentally, dendritic manganese stains are prominent in the granite, along fracture faces.) The breccia is so hard that it forms resistant cliffs. There is an alignment of the constituent stones and gravel that gives the appearance of stratification, particularly when viewed from a distance. This material rests upon the granite, and it lies high upon the slopes of Haiwee Ridge. Its apparent lines of stratification are very steep, dipping about 40 or 45 degrees directly down slope to the west. In fact, its surface forms the dip slope, wherever it occurs. The breccia is found in remnants for some 3 or 4 miles, running as a sort of bench or narrow ledge high along the west slope of Haiwee Ridge, always at a similar elevation.*

The coarse brown breccia has every appearance of being distinct from the lighter-colored Coso lake-bed material; it is dark colored, is consolidated, resists erosion to the extent that it creates overhanging cliffs and caves, and is variously from 50 to 150 or 200 feet in thickness. And yet, observation shows that the breccia is probably correlative with the Coso lake-bed material and constitutes the east margin of the lake-beds, and represents the contact and shoreline of the lake along the granite mountains. If the breccia and the lake-beds are correlative there should be a lateral gradation of one into the other -- a gradual change, perhaps, from the coarse breccia type into the lighter, water-worn, stratified lake-bottom sediments. This gradation is now thought to be observable in a few locations. But it happens that erosion has removed most of the lighter lake sediments from the side of the Ridge so that there are large gaps between the remaining breccia and the remaining lake sediments. Bare granite occupies the spaces between, Faulting has also played a part and has created offsets that confuse the correlation.

---

* Consideration was given at one time to the possibility that the breccia might have been a volcanic debris, consisting of fragmental ejecta and tuff lying in inclined layers. Boulders of granite and basaltic rock seemed to have been caught in. The materials composing the beds appeared to be compacted by the infiltration and deposition of cementing substances such as the iron oxides. However, the areal extent and location of the breccia and the fact that is composed largely of granite boulders precludes the possibility of its coming from a volcanic source.

Faulting has tilted or dislocated the lake beds; or again, it has terminated the hard breccia at a ravine, or by vertical displacement has brought breccia in fault contact with granite.

The role played by the breccia overburden, or its importance in the mining operations, is not yet clear except as follows: -- Inasmuch as the mineralization near the surface occurs at or near the contact of the lake beds that lie upon the granite, and inasmuch as the breccia occupies the same relative position and evidently is correlative with the lake beds, then there may very well be similar mineralization at places occurring at the contact of the breccia and the granite.

This possibility is pointed up by the fact that on a neighboring property, at a point some 1400 feet south of Coso Uranium workings, there is decided radioactivity registered by the Geiger counter along the contact between breccia and underlying granite. At Coso Uranium's Location No. 7 there is some radioactivity near the breccia, but the amount of ore was limited in extent at that point. Location No. 3 also has an indication of enrichment at the contact, where radioactive rocks are highly discolored and stained a deep red by some former thermal action.

The breccia-granite contact has not been explored either by core drilling or tunneling on Coso Uranium property, and such exploration constitutes part of the plan for future work.

Mineralization. -- All criteria indicate that the mineralization of Haiwee Ridge by uranium ores has been brought about by ascending thermal solutions, which have carried the minerals upward from deep-seated sources within the granitic magma below. Upon cooling, or upon evaporation, the heated waters or vapors have deposited their contents in such veins, cracks, crevices, fissures or interstices as they occupied.

There has undoubtedly been rearrangement due to leaching of the uranium salts at one locality or another, and consequently transportation and deposition at some other locality, during the millions of years. We are aware of some uranium enrichment in the Coso lake beds far distant from the base of the slopes of the present Coso range. Evidences of accumulation by wash down the slopes of Haiwee Ridge are being sought and are being given every consideration.

As to mineralization in the granite itself, where the granite has no covering of lake-bed or breccia material: - In certain places the granite is decidedly split by two or three planes of jointing, as has been described previously (page 11). The uranophane (if not autunite) is found in the crevices between the pieces of granite that have been split apart. The rock is criss-crossed with cracks or joints, and in a larger way it is also fractured by faulting that is deep seated. It is along the lines of fracturing that we seek the radioactive mineralization; and a fissure system that extends deep.

The granite ore that has been taken out and shipped came from within a few feet of the surface. Where the soil and disintegrated surface has been cleared away it is not difficult to recognize three joint planes, such as two nearly vertical but at right angles to each other, and a third

plane more horizontal, and normal to the other two. In this manner the granite is fractured and cross-fractured locally into blocks. The blocks are fairly flat-sided, and, for illustration, the blocks might be said to be less than a cubic foot in size -- some larger and some smaller. The seams between the blocks are tightly filled with narrow paper-thin, brown cementing material. This seam-filling is not hard, such as silica or chalcedony. Ordinarily, it would be said to be principally iron oxide. When the granite is blasted apart and shattered this material clings to the faces of the blocks and it can be scraped or chipped off. It assays about 3% or 4% U_3O_8 which is, of course, exceptionally high.

The mineralizing solutions have penetrated also into the rock on either side of the seams and have enriched the rock. In assaying this type of radioactive granite, care was taken in one instance to strip away all seam-cement material and to assay only the heart of the granite block. The chemical assay showed 0.46% U_3O_8 (Smith-Emery Company Lab No. 398179; 20-pound sample).

The impregnation of the granite is one of the factors that gives evidence of hydrothermal mineralization.

In the lake-bed material the uranophane is found in flaky form and in powdery form, in the interstices between sand grains. At times the uranophane is attached firmly to the grains and pebbles and at other times it is apparently quite free. The gravelly deposits thus far opened are almost dry -- that is, there is no standing water in the workings, due to the elevation of the Ridge above the valley floor -- although the sand and gravel is moist at a depth of some 15 or 20 feet below surface. Part of the laboratory testing and sampling procedure is to dry the samples. When dry, the sandy ore screens readily. Experiments in the laboratory have shown that the powdery uranophane can be screened through a 25-mesh screen and a 50-mesh screen, leaving oversize sand grains (plus 50 and plus 25) on the screens as waste or tails. In this way a simple up-grading is obtained. The process will be investigated further.

Along certain definite fault planes in the Coso lake-bed material there is high concentration of radioactive ore in the fault gouge and in the porous rock on either side. At Location No. 8-A there is a rather flat-lying fault in which the gouge is stained a dark red by solutions that have existed there and the gouge is also very rich in uranium mineral to the extent of assaying 0.35%-e U_3O_8 or better. This enrichment persists as the tunnel has followed the fault for some 40 feet, and apparently continues on.

The Coso lake-bed material is very thick at the west base of Haiwee Ridge but thins to a feather edge half way up the steep slope. The thinning is due to two factors -- erosion, and the circumstance, it is believed, that this locality marks the east margin of the lake deposits. Apparently the lake did not extend farther east, and consequently we have the thin strand line, including a shore breccia. Erosion has stripped away an unknown thickness of the soft sediments. At the west base of the Ridge a core hole might penetrate 400 feet of the lake beds. Farther up the slope where the beds are

thinner, granite might be encountered at 100 feet, etc. At Location No. 2 the granite is no more than 20 or 25 feet below surface, and the No. 2 tunnel is being run directly on the contact. The ore is in the lake-bed material as well as in the partly disintegrated granite at this locality.

It will be seen that so far as the lake-bed covering is concerned the mineralization can be either (1) at the contact with granite as at Location No. 2; or (2) at any place within the lake-bed material above the contact where faulting or fracturing has permitted the solutions to move through the formations and deposit the minerals, as at Location No. 8.

Reference has been made to the extrusive lava which emanated from a vent or chimney on the westerly and down-slope side of the property (Page 11). It remains to be seen what connection there may be, if any, between this extrusive action and the mineralization of the property. It is not expected that the lava itself will carry minerals. But the circumstance of a bursting through of molten rock may have significant affect upon the accumulation of minerals. The area close around the lava should be explored carefully by core drilling. The time of mineralization, relative to the time of such emission of lava, cannot be placed precisely. The mineralization appears to have been comparatively recent -- certainly after the Coso Lake Beds deposition, and consequently in late Pleistocene. Volcanism on a large scale occurred throughout the Coso Range during the Pleistocene orogeny. On the east side of Cactus Flat (2 to 3 miles east of the property) there can be observed a flow of lava which crossed a well-defined fault, and crossed also part of an earlier andesite flow. Since the volcanism and the mineralization have both occurred within a relative close time period, the possible relation of the two actions on the Coso Uranium property must not be overlooked.

The main geologic feature to be sought and established on the property is a principal vein system or fissure pattern or channel leading up from the granitic magma, through which the ore enrichment has been brought about by hydrothermal action. By drilling down into such channel -- or by sinking a shaft -- there is reason to expect that primary ore can be encountered. Such was the experience at Marysvale, Utah, and in Canada and other uranium localities, and more recently at the Kergon Mine in California.

Milling. - While no move has been made by Coso Uranium, Inc., toward the establishment of a mill in connection with the property, it will be said here that a representative of the company has made a visit to the mill recently established by the Verdi uranium organization three miles southwest of Mojave, Calif. This mill is some 80 miles from the Coso property and travel between the two points can be made either by highway or railroad.

It is noted that the Verdi mill is concentrating ore from their own mine with mill heads averaging about 0.10% or 0.12% U_3O_8. The grade of the final concentrate, and the ratio of concentration are not disclosed. The capacity of the plant is about 75 tons per day input. Coso Uranium is invited to investigate further the possibility of shipping ore to the mill for concentration, the basis of settlement to be a matter of negotiation.

# # # # #

Expenditures to Date. -- Details of expenditures will not be essayed in this discussion. The company accounts will supply the precise information. The field costs, beginning with the early exploration in 1954, with preliminary access roads and validation work, and continuing through the development program of 1955 with roads, field headquarters, opening cuts and tunnels, purchasing equipment, taking out surface ore, geological work, etc., has cost upwards of $60,000. Of this, it is estimated that $20,000 may represent tangible costs -- equipment and housing purchased -- and $40,000 will represent intangible costs -- labor, technical work and superintendence, aerial mapping, assays, road work (contract), water, gasoline, explosives, etc. As to the equipment, however, some is being acquired on a lease-purchase basis; consequently any cost mentioned here is subject to such interpretations and is an approximation only.

Crews of miners have been working on the property since August 1955. Under the direction of Mr. Jack McCord, superintendent, from 5 to 15 men have been continuously employed. The work is on an 8-hour basis, 6 days a week.

Accessibility of the Project. The Coso Uranium claims are readily accessible by dirt road (and partly black-top road) in passenger autos, although 4-wheel drive cars are advisable for the steep work-roads on the property itself. The property is 9 miles off U. S. Highway 395 in Owens Valley. The Southern Pacific R. R. roughly parallels this highway, and there is a siding and complete truck ramp for loading ore cars at Olancha. This is 11.7 miles from the property. Six ore cars were loaded at this ramp in December 1955 for shipment to the A.E.C. purchasing depot near Salt Lake City.

The village of Olancha has less than 100 population, and the facilities there comprise only a general store, two restaurants, a garage, a small motel and a dozen dwellings. Grant is another stop on the highway one mile closer to the property than Olancha, and a motel, restaurant and garage are situated at Grant. Therefore, Olancha and Grant serve very well as temporary stopping points for meals and lodging and groceries, and particularly as telephone stations nearest to the property (9 to 10 miles).

Lone Pine is a town of 3,000 population. It is on Highway 395 and is about 23 miles north of Olancha and therefore some 32 or 33 miles from the property. The miners and the superintendent working on the Coso Uranium property live in Lone Pine and make the trip to and fro daily. The town has certain supply stores which furnish adequate lumber, hardware, pipe, auto supplies, camp supplies, grocery and household supplies, etc. For more specialized mining equipment the nearest source is Bishop, distant 60 miles north of Lone Pine. Bishop has been one of the headquarters for supplies in the surrounding mining districts for many years -- the Sierra Nevadas, White Mts., Bishop, Tonopah, Darwin, Coso, Little Lake, etc.

Availability of Manpower, Facilities, Water, Power etc. -- The Owens River Valley area of California has been essentially a mining and agricultural center for a century. Many experienced miners make their homes in the valley. Thus far there has been no difficulty in locating adequate personnel.

The matters of materials, supplies and equipment have been mentioned above.

There is no electric power available at the property. The closest power line is some 4 or 5 miles distant, at the Haiwee Reservoir power lines of the Los Angeles City aqueduct system. Installation of a moderate Diesel generator unit is being considered.

Water is brought to the property in tank trucks and stored in steel tanks at the camp headquarters and at the workings. Sufficient water can readily be brought in daily to support a core drilling program.

Climate, Weather, Topography. -- The property in question is situated on the westerly flank of the Coso Range in Inyo County, Calif. The area is included in U.S.G.S. topographic map, California Haiwee Reservoir 15-minute quadrangle. The Coso Range rises on the east side of Owens Valley while the principal range of the Sierra Nevada forms the west wall of the valley. The elevation at Olancha, on the floor of the valley, is about 3,900 feet. On the property the elevations are between 4,800 and 5,800 feet.

The Coso Range is essentially desert country, very hot during a short summer and subject to some freezing weather in winter. The snow fall is light and no hindrance to mining. High winds are a menace at various times of the year.

The approach road to the property is from Grant, one mile south of Olancha on Highway 395. A dirt road is passable nearly all the year for passenger autos, though 4-wheel drive cars are essential for the steep roads on the property. The distance from Grant to the property is 11 or 12 miles.

A small working camp has been set up in a partially sheltered location on the crest of Haiwee Ridge, at Piute Pass. The facilities consist of two trailers, one for a dwelling and one for office and laboratory. A water supply and gasoline supply are maintained at the camp. Mining supplies are kept near the workings on the lower west slopes.

As stated elsewhere, the work on the property is on an 8-hour basis, 6 days a week. The miners live at their homes in Owens Valley and transportation to the property is pooled. The Company truck also carries a group of workmen from the valley to the Ridge each morning and returns them on the return trip in the evening.

# # # # #

4(d). As to accessibility of property for shipments, a good truck road leads to Olancha, 12½ miles distant, and there is a railroad siding and car-loading ramp at that point. The shipments go by Southern Pacific Railroad to Mojave; thence by Santa Fe to Barstow, California; thence by Union Pacific to Salt Lake City.

Lone Pine, California is a town of 2,000 inhabitants about 32 miles from the property, on a principal highway, and provides the base of supplies for operations. Lone Pine has also excellent residential facilities. At present, the Coso property is operated on an 8-hour shift basis; the men live in Lone Pine and pool the auto transportation expense.

4(e). Skilled labor is available since the Owens Valley has long been a mining area. The Bishop, Cerro Gordo, Darwin, Coso, Panamint and Mojave mining districts are all in the general vicinity. Materials and supplies are readily accessible.

Water and electric power are not available on this property. Water is hauled in by tank truck and stored in small reservoir tanks on the higher levels. There is no electric power on the property at present; a Diesel power plant will be installed in due time.

PART 5. The Exploration Project. --

(a). The mineral to be sought is uranium, and the particular ore in prospect will be of the uraninite type, at depth, rather than the autunite and uranophane now encountered in the surface workings.

The search for ore at any depth below 20 feet, whether by core drilling, probe-hole drilling, or sinking shafts, will be exploratory work on this property, for although ore has been mined and shipped from the surface it has not been found possible from a financial standpoint to start on a program of deeper exploration.

It is believed that the volume and the areal extent of the ore deposits found at the surface by tunnels and cuts in eleven locations to date warrant the expectation that primary ore will be encountered at depths above 500 feet.

(b). Proposed Work. -- The principal mode of exploration will be core drilling and probe hole drilling, to depths of 300 or 500 feet according to the location. In many cases, shallower holes such as 100 feet will suffice.

The ground to be tested comprises both a surface deposit of more or less consolidated clastic lake-bed material and a basement granite; likewise a brecciated material which is also underlain by the basement granite.

Since it has been established through work accomplished in shallow excavations and tunnels that the enrichment in the nature of secondary ores has been brought about by ascending solutions from below, it is now deemed absolutely necessary to explore in the fissured portions of the granite for the primary ores which experience has shown should be present.

In regard to core drilling, it goes without saying that when drilling in unconsolidated sandy material there will be poor core recovery. The water loss might be severe unless mud or bentonite is used properly. In harder granite the core recovery should be more complete and satisfactory. Many of the core holes will be partly in lake-bed material until the contact is reached, after which the hole will be in granite. If cores are not obtainable from the lake-bed material, then that portion of the hole can be probed with a Geiger counter and a log can be made showing the radioactive intervals.

The Joy Manufacturing Company, Los Angeles office, has recently quoted a price of $7.00 per foot for core drilling on the property. This price is higher than quotations and estimates received eight months ago, which were closer to $5.00 and $5.25 per foot.

The area to be covered by core drilling would be approximately 12 acres or 522,000 square feet. The proposed area or acreage is not a square or rectangle; although for sake of illustration 12 acres can be represented by a rectangle 900 feet long and 580 feet wide.

PART 6. Estimate of Costs.--

Spacing of drill holes 100 feet apart requires 52 wells for the 12 acres. Then: --

Number of wells	52
Average depth	x 275 Ft.
Total drilling	14,300 Ft.
Cost per Ft.	$7.00
Total cost.....	$100,100.00

Govt. Participation

The amount of loan being requested by Coso Uranium, Inc., is $75,000.00

(a) If the loan from the D.M.E.A. is granted, the entire exploratory work will be put on a contract basis, and virtually the only expenditures made out of the borrowed money will be for that purpose.

The precise lay-out of the drill holes is not established as yet, and will not be until the geological mapping now in progress has been completed, which will be about February 1, 1956. But the area is substantially decided upon so that a fair estimate of the amount of drilling can be made, as indicated above. The depth, averaging 275 feet, is considered to represent a mean average since it is clear that there will be more 200-foot holes than 500-foot holes.

The price assumed of $7.00 per foot, as proposed by the Joy Company, would not be accepted if contract work can be secured by a reliable firm at a lesser figure. The E. J. Longyear Company has been approached to ascertain if they would undertake the work; and other contractors including local firms in the Owens Valley will be consulted.

As to supervision of the work, engineering, geology, consultants, accounting, etc., it is anticipated that these types of employment are being carried on at present by the Company and are being applied to the operation of the surface workings which will be continued. Consequently only a pro-rata share of Company supervision, engineering, geology, consultants and similar costs need be charged to the exploratory project.

The Company wishes to consult with the D.M.E.A. regarding the costs; and the Company wishes to present its bids on contract for the work and firm offers as of the date when operations appear likely to begin.

PART 7. The company is prepared to furnish its share of the proposed project, in the amount of substantially $25,000.00

The Company would furnish its share in money.

# # # # #

"MINERAL EXPLORATION • TEST BORINGS • GROUT HOLE DRILLING"

CONTINENTAL DRILLING COMPANY

DIAMOND DRILLING CONTRACTORS

2810 NORTH FIGUEROA

LOS ANGELES 65, CALIFORNIA

TELEPHONE CAPITOL 2-7146

R. F. THIES
MANAGER

RECEIVED
FEB 23 1956

February 8, 1956

Coso Uranium, Inc.
2485 American Avenue
Long Beach, California

Attention: Mr. Merritt

Gentlemen:

Confirming our telephone conversation of February 7 our quotation for core drilling your property recovering AX cores is $6.00 per lineal foot.

You are to furnish access to the drill sites and necessary water.

Yours very truly,

CONTINENTAL DRILLING CO.

RF Thies

RFT/ee

R. F. Thies, Manager

JOY MANUFACTURING COMPANY
5426 EAST WASHINGTON BLVD.
LOS ANGELES 22, CALIFORNIA
TELEPHONE RAYMOND 3-6305

RECEIVED
FEB 23 1956

EXECUTIVE OFFICES
HENRY W. OLIVER BUILDING
PITTSBURGH 22, PA.

June 27, 1955.

Cosa Uranium Company
2485 American Avenue
Long Beach, California

Attention: Mr. W. O. Merritt

Gentlemen:

The following wire was received which I gave to your Mr. Lee by phone and which this letter confirms:

> "Re Cosa Uranium will have drill and crew available July 8th from Santa Cruz California, quote $5.85 foot for AX drilling, minimum 1000 feet. Customer to furnish roads and haul water and facilities for movement equipment between holes. Reaming, casing and cementing at $60.00 per 8 hour shift plus cost material used up. Price on additional drilling would be based on actual costs first 1000 feet."

We sincerely trust this is the information you require.

Yours truly

JOY MANUFACTURING COMPANY

W. T. Kauffman

r

1.

DESCRIPTION AND INFORMATION ON ASSAYS
CONTAINED IN GEOLOGICAL REPORT
-- by W. Ormond Merritt

RECEIVED
FEB 08 1956

ASSAY NO. 1: Dated February 1, 1955. Laboratory No. 396455.
Designated "Rock" showing U308 - - - 0.33%.
This sample was taken in the processes of prospecting a Granite ledge some 60 feet above what is now referred to as Discovery No. 2.

ASSAY NO. 2: Dated February 7, 1955. Laboratory No. 396670-71.
Designated "Rock."
These samples were taken from the same ledge as Assay No. 1 and the reason for having separate runs made was that the first one designated "Hard" was apparently autonite and of entirely different texture as the second one referred to as "D.G." which appeared to be carnotite but in granite that was considerably decomposed.

These were taken right at the surface and very much in the prospecting and exploratory stage.
The "Hard" yielded U308 - - - 0.15%.
The one marked "D.G." yielded U308 - - - 0.19%.

ASSAY NO. 3: Dated February 22, 1955. Laboratory No. 397214-15
The first item in this Assay designated "Rock" showing U308 - - - 1.47% was a 5 pound sample of decomposed granite (carnotite) as a result of opening up the ledge from which samples No. 1 and 2 were selected.
This sample was not selected as a result of a high geiger count but because it appeared to be in good equilibrium and was still part of the prospecting and exploration work carried on above what is now referred to as Location No. 2.

The second item in this assay referred to as "Sand" showing U308 - - - 0.03% was 10 pounds of sand taken from a bank of over-burden about 300 feet West and slightly North of Location No. 2. The reason for selecting this was because the material showed a geiger count of - - 0.25%.
This was recognized as a mass reading and it was suspected that this material because of it's exposure would show very little on assay, but it was a part of the general exploratory program of the area. Since this Report was written two more discoveries have been made.
One in the immediate vicinity of where this "Sand" sample had been taken and it is felt that the granite that has been uncovered under the sand over-burden was responsible for the high geiger count of 0.25%, found in the "Sand."

ASSAY NO. 4: Dated March 12, 1955. Laboratory No. 398179.
Marked "Granite" showing U308 - - - 0.46%.
This was a "Grab" sample weighing 20 pounds and because the two seam sides showed a much higher geiger count than the center, it was decided to remove the yellow stain before testing, so as to get better information on the equilibrium of the sample.
This sample was taken after blasting into the granite some 60 feet below the first prospecting ledge, referred to in the previous assays. This was also the first sample taken from what is now Discovery No. 2.

ASSAY NO. 6: Dated March 25, 1955. Laboratory No. 399015.
Marked "800 — 1."
This sample was taken at the very beginning of opening up the face of Discovery No. 2. A sample of 800 pounds taken at a level of 3 feet down and across the face of approximately 20 feet.
The sample was ground and quartered and showed U308 - - - 0.15%.

There was a lapse of nearly thirty days before visiting the property and taking further samples because during this time the Prospecting Crew were at work protecting Location and Discovery holes over the approximately 500 acres of Claims.

ASSAY NO. 8: Dated April 21, 1955. Laboratory No. 400054.
Marked Sample "150."
The weight of the sample was 81 pounds, which was part of approximately 200 pounds taken across the face of Location No. 2 at a depth of about 6 feet.
Showing U308 - - - 0.28%.

ASSAY NO. 9: Dated April 21, 1955. Laboratory No. 400065.
Marked "Granite" and weighing approximately 70 pounds, was taken across the face of Location No. 2 at a depth of about 10 feet.
Showing U308 - - - 0.41%.

ASSAY NO. 10: Dated April 21, 1955. Laboratory No. 400066.
Marked "Carnotite."
Was a 5 pound sample selected after blasting at Location No. 2 at the 10 foot level, and was run separately because it showed an unusually thick coating of "Carnotite" with considerable penetration of the granite.
The assay was to furnish information as to the equilibrium of this particular sample.
It showed U308 - - - 0.78%.

ASSAY NO. 5: Portrays a Spectrographic Analysis dated March 12, 1955. Laboratory No. 398178. Marked "Black Material." This sample was selected from Location No. 1 and showed a very high geiger count on a "mass" reading.

ASSAY NO. 11: Dated April 21, 1955. Laboratory No. 400067. Marked "Pitchblende." Showing U308 - - - 0.86%. Was a selected sample from Location No. 1 and part of the same piece that is referred to in the Analysis of Doctor Thomas Clements.
The sample weighed approximately 1 pound and was part of the prospecting and exploratory program at this Location.

PROSPECT 3411

FORM 1

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

RECEIVED FEB 28 1956

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 396455

Date February 1, 1955.

Sample Rock

Received 1-28-55 *Marked*

RECEIVED FEB 23 1956

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach, California.

REPORT OF DETERMINATION

Uranium Oxide (U_3O_8) ---------- 0.33%

Respectfully submitted,

SMITH-EMERY CHEMISTS AND ENGINEERS

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910
CHEMISTS - ENGINEERS
781 EAST WASHINGTON BOULEVARD
LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 390670-71 *Date* February 7, 1955

Sample Rock

Received 2/3/55 *Marked*

Submitted by American Plant Protection,
2485 American Avenue,
Long Beach 6, California.

REPORT OF DETERMINATIONS

"Hard"
Uranium Oxide (U_3O_8) ------- 0.15%

"D.C."
Uranium Oxide (U_3O_8) ------- 0.19%

Respectfully submitted,

CHEMISTS AND ENGINEERS

PROSPECT 3411

FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 397214-15

Date February 22, 1955.

Sample Rock

Received 2-15-55

Marked

Submitted by American Plant Protection,
2405 American Avenue,
Long Beach 6, California.

Att.: Mr. Merritt.

RECEIVED
FEB 23 1956

REPORT OF DETERMINATIONS

"Rock"

Uranium Oxide (U_3O_8) ---------- 1.47%

"Sand"

Uranium Oxide (U_3O_8) ---------- 0.03%

Respectfully submitted,

CHEMISTS AND ENGINEERS.

PROSPECT 3411

FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY No. 398179 *Date* March 12, 1955

Sample Rock

Received 3-7-55 *Marked* "Granite"

Submitted by American Plant Protection Company
2485 American Avenue,
Long Beach 6, California.

Copy to: Walker S. Clute

REPORT OF DETERMINATIONS

Uranium Oxide (U_3O_8) ---------- 0.46%

Note: Yellow stain on sides removed before preparing sample for testing.

Respectfully submitted,

Smith-Emery Co.

CHEMISTS AND ENGINEERS

LOS

PROSPECT 3411

FORM 50

COPY

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

METALLURGICAL AND TESTING ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21

CALIFORNIA

LABORATORY

No. 398178

Date March 12, 1955

Sample Rock

Received 3-7-55 *Marked* "Black Material"

Submitted by American Plant Protection Co.,
2495 American Avenue,
Long Beach, 6, California.

Copy to: Walker Clute.

REPORT OF QUALITATIVE SPECTROGRAPHIC EXAMINATION

Element	*Approximate Quantity*
Silicon, Aluminum	Major Constituents
Iron, Sodium, Potassium	Intermediate Constituents
	Minor Constituents
Magnesium	0.05%
Arsenic	0.05%
Titanium	0.05%
Barium	0.05%
Calcium	0.05%
Strontium	0.05%
Antimony	0.01%
Lead	0.01%
Zinc	0.01%
Zirconium	0.01%
Boron	0.005%
Vanadium	0.005%
Copper	0.005%
Nickel	0.005%
Molybdenum	0.005%
Manganese	0.005%
Cobalt	0.005%
Chromium	0.005%
Gallium	0.001%
Uranium	Present
Rare Earths	Trace
Thorium	None found

Respectfully submitted,

Smith-Emery Co.

CHEMISTS AND ENGINEERS

All reports are submitted as the confidential property of clients. Authorization for publication of our reports, conclusions, or extracts from or regarding them is reserved pending our written approval as a mutual protection to clients, the public and ourselves.

(See statements on reverse side regarding qualitative spectrographic examination)

PROSPECT 8411 FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

RECEIVED FEB 28 1955

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY No. 399015 *Date* March 25,1955

Sample Ore

Received 3-23-55 *Marked* "Sample No. 800-1"

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach, 6, California.

Copy to: Wlaker S. Clute

REPORT OF DETERMINATIONS

Geiger Count,
Equivalent Uranium Oxide (U_3O_8) ---- 0.1%

Chemical Determination:
Uranium Oxide (U_3O_8) ---------- 0.15%

Respectfully submitted,

Smith-Emery Co.

CHEMISTS AND ENGINEERS

E O S

7

COPY

SMITH-EMERY COMPANY

ESTABLISHED 1910
CHEMISTS - ENGINEERS
METALLURGICAL AND TESTING ENGINEERS
781 EAST WASHINGTON BOULEVARD
LOS ANGELES 21
CALIFORNIA

LABORATORY
No. 399014 *Date* March 25, 1955

Sample Ore

Received 3/23/55 *Marked* "Sample No. 200-1"

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach 6, California.

cc Walker S.Clute.

REPORT OF QUALITATIVE SPECTROGRAPHIC EXAMINATION

Element	*Approximate Quantity*
Silicon, Aluminum	Major Constituents
Sodium, Potassium	Intermediate Constituents
	Minor Constituents
Iron	1%
Barium	0.1%
Titanium	0.05%
Strontium	0.05%
Magnesium	0.05%
Manganese	0.01%
Zirconium	0.01%
Chromium	0.005%
Gallium	0.005%
Boron	0.005%
Copper	0.005%
Nickel	0.001%
Lead	0.001%
Venadium	0.001%
Rare Earths	None found
Tungsten	None found
Thorium	None found

****

Geiger Count,
Equivalent Uranium Oxide (U_3O_8) ---------- 0.10%

****

Chemical Determination:
Uranium Oxide (U_3O_8) ---------- 0.095%

CHEMISTS AND ENGINEERS

All reports are submitted as the confidential property of clients. Authorization for publication of our reports, conclusions, or extracts from or regarding them is reserved pending our written approval as a mutual protection to clients, the public and ourselves.

(See statements on reverse side regarding qualitative spectrographic examination)

Note: There must be at leat 0.2% Uranium or Thorium to register on a spectrogram

7

PROSPECT 3411

FORM 1

LABORATORY REPORT

COPY

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 400054 *Date* April 21,1955

Sample Ore

Received 4-14-55 *Marked* "Sample No. 150

Submitted by American Plant Protection,Inc., COSO LOC 2 Clute
2485 American Avenue,
Long Beach, 6, California. 4-13-55"

Copy to: Walker S. Clute.

REPORT OF DETERMINATIONS

Weight of Sample ---------- 81 pounds

Geiger Count,
Equivalent Uranium Oxide (U_3O_8) -------- 0.34%

Chemical Determination:
Uranium Oxide (U_3O_8) ---------- 0.28%

Respectfully submitted

Smith-Emery
CHEMISTS AND ENGINEERS
EOS

PROSPECT 3411

FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 400065

Date April 21, 1955.

Sample Ore

Received 4-14-55 *Marked* "Granite"

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach 6, California.

REPORT OF DETERMINATION

Uranium Oxide (U_3O_8) ---------- 0.41%

Respectfully submitted,

Smith-Emery Co.

CHEMISTS AND ENGINEERS.

PROSPECT 3411

FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 400066

Date April 21, 1955.

Sample Ore

Received 4-14-55 *Marked* "Carnotite"

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach 6, California.

REPORT OF DETERMINATION

Uranium Oxide (U_3O_8) ---------- 0.78%

Respectfully submitted,

Smith-Emery Co.
CHEMISTS AND ENGINEERS.

PROSPECT 2411

FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMI... J-ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY
No. 400067

Date April 21, 1955.

Sample Ore

Received 4-14-55

Marked "pitchblende"

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach 6, California.

REPORT OF DETERMINATION

Uranium Oxide (U_3O_8) ---------- 0.86%

Respectfully submitted,

Smith-Emery Co.
CHEMISTS AND ENGINEERS.
EOS

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910
CHEMISTS - ENGINEERS
781 EAST WASHINGTON BOULEVARD
LOS ANGELES 21, CALIFORNIA

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AUTHORIZATION FOR PUBLICATION OF OUR REPORTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

LABORATORY No. 400247 *Date* April 26, 1955

Sample Ore

Received 4-18-55 *Marked* "Location #2"

Submitted by American Plant Protection, Inc.,
2485 American Avenue,
Long Beach 6, California.
Att.: W.O. Merritt.
Copy to: Walker S. Clute.

REPORT OF DETERMINATION

Uranium Oxide (U_3O_8) ---------- 0.40%

Respectfully submitted,

Smith-Emery Co.
CHEMISTS AND ENGINEERS.

ORE TESTING
SAMPLINGS
and
SUPERVISION OF
ORE SHIPMENTS

Established 1916

Phone
VAndike 9328

ED. EISENHAUER, Jr.

ASSAYER -- METALLURGIST -- CHEMIST

320-322 SOUTH SAN PEDRO STREET
LOS ANGELES 13, CALIF.

December 3/55

Coso Uranium Co.
Long Beach
California

Subject: Assays of Ore.

Marked:	Uranium Oxide (U_3O_8)
#8-A Face	.198%
#8-A dump at 5	.06%
#8-A Higrade	.65%
#9-Cut	.172%
#9-Composite Lamp.	.065%
#9-Higrade	.39%
#8 B	.062%
#5	.053%

(Duplicate)

Respectfully submitted,

Ed. Eisenhauer, Jr.

Progress Geological Report on the

Coso Uranium Mine

Inyo County, California

RECEIVED
FEB 28 1956

by

Donald Carlisle, Ph.D.

January 21, 1956

Field Work January 14, 15, 16, 17, 1956

515 - 21st Place
Santa Monica, California
January 21, 1956

Coso Uranium, Inc.
2485 American Avenue
Long Beach, California

RECEIVED
FEB 23 1956

Attention: Mr. O. W. Merritt, President
Mr. Walker S. Clute, Consulting Geologist

Gentlemen:

I am submitting herewith my progress report on the geology of the Coso Uranium Mine on the west flank of the Coso Mountains near Olancha, Inyo County, California (Secs. 24, 25, R. 37 E., T. 20 S. and Secs. 24, 25, R. 38 E., T. 20 S., M.D.B.M.). This is based upon field mapping requested by Mr. Walker S. Clute and performed on January 14, 15, 16, and 17, 1956. I was assisted in the field by Mr. Conrad Hously and Mr. Walker Clute, Jr., and have had access to the reports of Mr. Clute, Sr., of April 25, May 9, June 6, 18 and 26, 1955.

Mapping was done on air photographs and on the topographic map of the mine and vicinity at a scale of 1" = 200' prepared by Hycon Aerial Surveys, Inc., of Pasadena. A map at 1" = 20' was prepared for the workings at Location 8.

The purpose of the work has been to make a geological map of the area showing major and detailed structure, to investigate the nature of occurrence of the uranium mineralization, and to contribute to the planning of further exploration. This report is not concerned with mine evaluation. Descriptions of the property, ownership, history, equipment, and workings are omitted. Detailed mineralogy and compilation of assay maps have yet to be done.

A colored copy of the geologic map prepared on the 1" = 200' base has been forwarded to the mine along with cross sections or profiles. The first part of the report discusses the geology. Specific suggestions for exploration are made in the latter half of the report.

Yours sincerely,

Donald Carlisle

DC:ER

Progress Geological Report on the

Coso Uranium Mine

General Geology

The oldest rocks exposed on the west flank of the Coso Range are coarse- and medium-grained granites of varying composition, apparently an eastward continuation of the granites of the Sierra Nevada. In the mine area two varieties of granite occur; a predominant one with very little dark mineral, called alaskite, and a less abundant biotite granite. Others may be recognized as more detailed mapping is completed and the distinction of these may help in understanding the uranium mineralization. Some fine-grained granitic rocks appear to be related to faults in the granites.

The granites were block-faulted along north-southerly lines, tilted and deeply eroded prior to deposition of the Coso formation lake beds in late Tertiary or Pleistocene times. The ancient erosion surface developed at this time is a major control for every ore body known thus far except probably the occurrence at Location 1 and perhaps in part at Locations 2, 6, and 7. This erosion surface, though inclined generally westward, was rugged in detail having local hills and steep-walled gullies. A joint pattern had formed earlier in the granite with prominent NNEly and WNWly joint sets both with steep dips and a third less regular or prominent low angle joint set. These joints and the distribution of more resistant and less resistant

varieties of granite have controlled the irregularities in the ancient erosion surface. Weathering and exfoliation extended downward in the granite along the joint system for depths of 50 feet or more below the erosion surface.

At this same time a lake developed in the basin to the west and the Coso formation lake beds gradually filled the lake. The lowermost beds along the margin of the lake are consolidated gravel and coarse sand derived from the weathered granite immediately below. Today, after consolidation of these beds, it is commonly difficult to pick the exact break between weathered granite and overlying lake bed. The Coso lake beds are finer grained and more distinctly bedded away from the old shore line or higher in the section. They were lying flat at the time of deposition. Closer to shore the coarse-grained beds are less clearly bedded and had a slight initial dip towards the basin just as present-day lake shore sands and gravels commonly dip gently toward a lake. If a person traces a given lake bed shoreward (generally eastward) in the Coso section, he will find it to butt out against the weathered granite of the old erosion surface. This relationship of the Coso lake beds to the more steeply inclined granite erosion surface is a buttress unconformity and will henceforth be referred to as the unconformity.

The Coso lake beds vary from coarse conglomerate to fine-grained siltstone and near the mine they are composed entirely of eroded granitic material. Higher in the section and north and west of the mine area there are increasing quantities of volcanic materials in the

beds. Beds are from a few inches to a few feet thick. Finer grained beds are either massive or thinly laminated. Graded bedding, cross bedding, scour and fill and soft-rock structures are common. Colors are from light gray to medium brown.

After consolidation the Coso lake beds were tilted westward at an angle of 20 degrees or less and moderately eroded. If there was additional faulting at this time, it was not strong in the general area of the mine. Several volcanic vents then developed along the Coso Range producing both volcanic ash and flows and plugs of porphyritic andesite. Following the explosive activity some of these vents collapsed or subsided dragging downward the solidified lava and immediately adjacent lake beds and granite in a contorted mass of circular pattern. One of these circular collapse areas occupies the west central part of the mine area west of Location 8 and south of Location 10. Faulting then occurred, possibly a renewal of movement on older faults, mainly along the NNE joint set in the granite but offsetting the lake beds and volcanics as well. The faults mapped thus far at the mine are normal; east side down.

As discussed below, the uranium mineralization is thought to have occurred after faulting of the Coso lake beds.

Finally, recent erosion has stripped away some of the volcanics and lake beds, exhuming some of the weathered granite under the ancient erosion surface and exposing some relatively unweathered granite for the first time. The depth of material removed during this post-volcanic erosion is probably not more than 100 feet or so. Some alluvial fans

that formed early in this recent cycle of erosion have been dissected by present stream gullies.

The Coso Uranium Basin and Post-Coso Faults

It was mentioned that the pre-Coso erosion surface was rugged in detail. As shown on the map (see Figure 1), a large irregular patch of Coso lake beds occupies the central mine area and is flanked on the north and south by bare granite. This patch occupies an eastern embayment or basin along the shore of the ancient Coso lake. It will be called the Coso Uranium Basin hereafter and is important for several reasons. All of the known occurrences of uranium on the property except those at 1 and 1A are around the flanks of this basin, either in the weathered and exhumed granite beneath the unconformity (Locations 2, 6, 7), in the basal Coso formation at the unconformity (Locations 3, 4, 5, 7, 10, 12), or in certain beds near the base of the Coso formation (Locations 8 and 9). Second, this basin, surrounded by known occurrences, contains a thick section of lake beds including at least the one favorable bed exposed in Location 8A and possibly more. It may be the host for a sizable ore body. Third, the western edge of this basin happens also to be occupied by the volcanic collapse area along the flanks of which there may have developed faults or crushed zones suitable for ore mineralization both in the Coso formation and in the underlying granite. Eight Fault, Eleven Fault, and Five Fault (the faults are named after the Location where they occur) may form a zone along the eastern margin of the collapse area. There is some

indication at 5 that the movement on the fault is greater at depth suggesting that it may perhaps amount to a few tens of feet at the unconformity and may constitute an important ore control there. Conceivably, all of these NNEly faults that show only 20 feet or so throw in the Coso formation may be along older faults of considerable throw in the granite. They are parallel to the predominant joint set in the granite. Eight Fault can be traced for almost 200 feet southerly before passing under alluvial fan material. Its projected position is covered by fan or alluvium almost to the south edge of the Coso Uranium Basin but is marked by a break in the topography suggesting that the fault or fault zone continues southward across the central part of the basin. Such a fault zone marking the eastern edge of the collapse area is to be expected.

Location 1A is on the exhumed weathered granite surface on the south flank of another basin, which is mainly on Inland Oil property. Near Location 1A the Coso lake beds were very thin or had pinched out entirely beneath the volcanics but the lake bed section thickens rapidly northward to more than 400 feet in the central part of the Inland Oil property. Between the Coso Uranium Basin and the Inland Oil Basis the eastern shore of the lake was west of Locations 1 and 3 and was very steep. Location 1 is in relatively unweathered granite perhaps 80 feet beneath the pre-Coso erosion surface.

The Uranium Mineralization

The uranium deposits occur in two structural positions (Figure 2); 1) Deposits near the granite-Coso formation unconformity. 2) Deposits

deep within unweathered or only partly weathered granite. To these may be added a third: deposits high in the Coso formation as at the Inland Oil property or in younger tuffaceous beds and gravels as at the Green Velvet and Valley View claims further north. These latter appear to be weak concentrations from percolating ground waters and might be expected anywhere in the area, though rarely significant. They are not considered further.

The mineralogy of the deposits is not yet worked out.

Deposits Near the Unconformity

These include: a) concentrations in the weathered granite beneath the pre-Coso erosion surface of such oxidized uranium minerals as uranophane, probably autunite and other unknown minerals, and possibly some black unoxidized uranium mineral along with white, brown, and black chalcedonic quartz and minor pyrite (7) and secondary uranopilite (Locations 2, 6, and 7); b) concentrations of the same minerals (more or less) in the basal Coso beds at the unconformity (Locations 3, 4, 5, 7, 10, and 12); c) concentrations of autunite (?) and unknown uranium minerals with iron oxides in certain beds near the base of the Coso formation (Locations 8 and 9). In all of these the uranium appears to be controlled by zones of greater permeability adjacent to joints in the granite or in coarser grained or cross-bedded beds and by diffusion. Commonly there are diffusion rings or patterns of iron oxides which also outline the richer uranium mineralization and which cut across the host beds or rock. Clearly the uranium has been

deposited from solutions that have migrated along permeable zones and apparently the uranium (and commonly iron) has precipitated out as the various components of the solution have separated by selective diffusion or as the water of the solution has been absorbed or evaporated.

The main occurrence at the Ontario Mineral property to the south illustrates the mode of emplacement of some of this ore better than any other single occurrence known so far. Here an east-westerly steep fault has offset the granite-Coso formation unconformity some 20 or 30 feet with considerable drag on the south or footwall block (Figure 3). Mineralization consisting of a dense black material with fine-grained pyrite (?) has cemented weathered granite and basal Coso sandstone and conglomerate upward and outward from the fault in the dragged zone and in other permeable beds but only adjacent to the fault and only near the unconformity. Without much doubt, this mineralization is a product of rising solutions that were confined to a fault fracture within the unweathered granite but were able to deposit much of their dissolved load in the weathered, brecciated or permeable rocks near the unconformity, the first rocks capable of receiving the deposition that were encountered by the ascending waters (cf. Clute, p. 5, April 25, 1955).

Post-Coso faults apparently have served as the ore solution channelway at Locations 5, 8, and 11. At Location 6 a weak shear zone along NNWly joints (perhaps a continuation in part of the fault through Plute Pass) has acted as a channelway and exfoliation joints have controlled diffusion. The pathways of the solutions to the other occurrences are not yet clear.

In addition to this mineralization from ascending (hypogene) solutions, there apparently has been a redistribution of uranium by oxygen-rich ground waters near the unconformity and deposition as the colored or secondary uranium minerals. As mentioned below in discussion of the ore in the granite, the uranophane in the weathered granite at Location 7 may have been derived by leaching and precipitation from the gray radioactive unweathered granite.

The similarity of occurrence of the deposits with dark pyritic mineralization near the unconformity on the Coso Uranium and Ontario Minerals properties suggests that these deposits are a product of a single epoch of mineralization. This epoch would be after faulting of the Coso beds (at least post-Pliocene), conceivably after faulting of the volcanics; but this has not yet been shown. In either event the mineralization could have occurred within the last one or two million years, a time only barely sufficient to achieve radioactive equilibrium.

Specific Suggestions Regarding Deposits Near the Unconformity

Location 5 (Figure): The ore is localized in the basal Coso lake beds and in weathered granite near the intersection of the unconformity and Five Fault. This intersection plunges steeply to the south owing to the southwestward dip of the unconformity here. The favorability of this structure may be expected to increase with depth and it should be followed as far as it will go by sinking on the intersection, especially the trough on the east side, and by drilling along

the projection of this intersection.

Location 7: The detailed geology is not mapped here yet but I expect that further exploration here will be warranted.

Location 8 and southward (Figure): Sink on the fault as planned to explore for other favorable beds and especially for the basal beds and for ore beneath the unconformity. On the basis of this, lay out a program of lateral exploration in the ore beds so that the mine will be developed in an orderly fashion. As distances from present portals increase it will become increasingly more advantageous to explore by drilling from the surface. Depths are not great (see cross section 44500 E) and the more complete picture of the ore bodies obtained through drilling will facilitate an efficient layout of mine workings ahead of development.

The prospects for drilling south of Location 8 are good. As mentioned above, a fault zone forming the eastern border of the collapse is to be expected here and mineralization both related to the unconformity and also deeper in the granite are logical targets.

Location 9: The exact stratigraphic position of these lenses relative to the favorable bed(s) at 8 should be worked out and the possibility of ore in lower beds or at the unconformity and down dip into the Basin should be investigated. This could form a part of the drilling program south of 8.

Location 11: The structure and weak mineralization here is very similar to that at 8 and should be investigated downward in the same manner as at 8.

Deposits within the Unweathered Granite

Information is much scarcer and possibilities for a large ore body are unknown deeper within the unweathered granite.

At Locations 1 and 6 uranium occurs in relatively unweathered or slightly weathered granite a) in seams up to 1/8 inch wide along joints or shear cracks accompanied by white, brown, or black chalcedonic quartz and minor pyrite (?), and b) within the gray unweathered granite apparently as a black sooty material between the grains of quartz and feldspar in the granite and accompanied by minor fine-grained pyrite.

At Location 7 a small core of the unweathered radioactive granite remains and contains the unknown black material and minor pyrite. Around the edges of this core and along fractures a brown diffusion zone of iron oxides has formed which grades outward into tan and buff weathered granite. The radioactivity drops off rapidly away from the unweathered core and the pyrite has been decomposed. The uranophane and possibly other secondary uranium minerals along joints nearby could have been precipitated from the same solutions that weathered the granite. A similar pattern is seen along the joint sets at Location 1. Yet Location 1 is beneath the original weathered zone produced under the ancient pre-Coso erosion surface.

This leaching of the granite and redistribution as secondary uranium minerals, therefore, is thought to be a very recent effect. And the dark pyritic veinlets and grains within the granite represent earlier mineralization.

The interpretation of this dark pyritic mineralization is critical in planning the exploration for possible large ore bodies in the granite. Possibly 1) the black pyritic veinlets and the dark pyritic material between the grains in the granite were deposited at about the same general time from solutions rising through the granite, or 2) the pyritic material between the grains in the granite is much earlier, perhaps a part of the granite itself, and the veinlets are later, perhaps a result of leaching from the grains in the granite and deposition along the fractures by rising solutions. At Location 1 the gray granite immediately next to the dark veinlets is commonly altered to a light gray color but this does not necessarily prove leaching.

If possibility 1) is correct, the mineralization is essentially the same as that at the Ontario Minerals fault occurrence except that the deposits now considered are in the granite. It might be expected then that the uranium would have precipitated along permeable zones and the search would be concentrated along major faults, shear zones, or brecciated regions in the granite. The southward projections of Five, Eleven, and Eight Faults forming the eastern border of the collapse area and the collapse area itself are favorable regions for exploration. These can be examined by deep drilling in more or less the same area explored south of Location 8 for ore near the unconformity.

If possibility 2) is correct, the search must turn to varieties or regions of granite that were originally enriched in uranium. For this reason the several varieties of granite should be mapped carefully and attention should be given to the amount of dark pyritic material

between the grains of unweathered granite from place to place.

It is perhaps noteworthy in this respect that Locations 1, 2, 7, and possibly 6 are in granite highs on the pre-Coso erosion surface and the richest occurrence at 7 is itself a small high.

Considerable work on the petrology and mineralogy of occurrences in the granite is required and justified.

Mining Geology

The appended suggestions for technical practice are made while I have them in mind. Some of the following or better schemes may have already been adopted.

Respectfully submitted,

Donald Carlisle

APPENDIX ON MINING GEOLOGY PRACTICE

Mine Maps

The following maps of the mine should be completed or prepared.

1. Surface geology map and X sections (EW and NS) at 1" = 200'

   Map on transparent ozalid with ozalid prints for work sheets. X sections on linen with ozalid prints for work sheets.

2. Surface geology map at 1" = 100' of principal mine area

   Map on transparent ozalid with ozalid prints for for work sheets.

3. Detailed maps of workings at 1" = 20' grouped as follows:

   Area 8

   Area 11, 4, 5, 6

   Area 7

   Area 1

   Area 2

   a) Base map by transit or plane table plotted on single mounted paper or stabiline

   b) Linen tracing for geology plans (separate tracings for surface and underground if necessary)

   c) East-West cross sections on linen at intervals of not more than 50 feet and coinciding with the present co-ordinate system (scale 1" = 20')

   d) Ozalid prints of these maps and sections for work sheets in field and office

   e) Ozalid prints of maps for assay plans

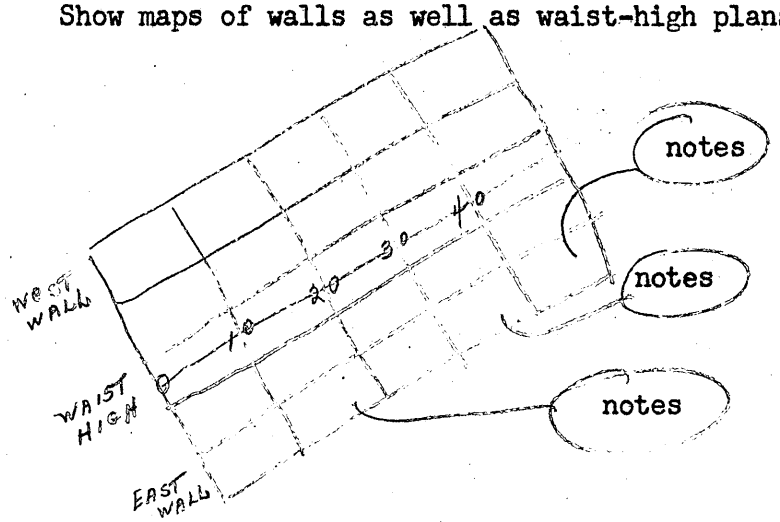
Files

1. Survey notes; transit, plane table. All calculations filed as made.

2. Geology work sheets

   Take abundant written notes directly on work sheets.

   Show maps of walls as well as waist-high plans.



   Use color scheme for ore and altered rocks.

3. Sample notes

   Every sample must be recorded (chronologically).

Sample Number	Working	Location	Type Sample	Width	Mineralogy or other descrip.	Assay	
						Chemical U_3O_8c	Radio. U_3O_8c

Specific Procedure

1. Complete 1" = 20' maps immediately.

   a) Tie #8 survey into section corner and orient map with section line. (For stations underground number with working number plus station number; thus, portal is 8-1.)

   b) Tie together one point on each of Nos. 11, 4, 5, and 6 and complete 1" = 20' survey of these to show correct relative positions on plan and section. Plot and project the intersection of Five Fault and the unconformity in plan and section.

   c) Prepare 1" = 20' map of No. 7.

   d) Prepare cross sections of a), b), c).

2. Complete geology on the three maps and sections at 1" = 20' described above.

3. Complete sampling of these areas at intervals of not more than 10 feet and assay by radiometric sampler. The samples should be correlated with geology as, for example, in No. 8. The various horizons distinguished by fluorescence should be sampled separately, but samples across mineable widths should be taken as well.

4. Pick up geology in workings and sample face every round, showing geology and location of samples in face on geology work sheet.

5. Complete geology of mine area on 1" = 100' map showing in addition to contacts on 200 scale map
   a) Varieties or facies of igneous rock
   b) More detail on minor structures, joints, etc.

   (Add pertinent new data to 200 scale map and sections.)
6. Work out detailed stratigraphy of Coso lake beds in the mine area.
7. Bring all cross sections up to date weekly.
8. Bring all assay plans up to date daily.
9. Transfer geology from field work sheets (ozalid copies) to master linens as obtained.

Docket
Ellis

Project Summary Report

By: F. M. Murphy

Date: October 18, 1957

1. Docket No. DMEA-4191 (Uranium)
   Contract No. Idm-E994

   Operator: Coso Uranium, Inc.
   2485 American Avenue
   Long Beach 6, California

   Operator's Property Rights:

   Owner of 23 unpatented lode mining claims - White Swan Nos. 1 through 10, Linda Sue Nos. 1 through 5, Helen Faith Nos. 1 through 5, and Esther Nos. 1 through 5.

   The claims are situated in secs. 24 and 25, T. 20 S., R. 37 E., and in secs. 24 and 25, T. 20 S., R. 37½ E., M.D.B.M., Inyo County, California.

2. Contract dated: August 21, 1956

   Amendment No. 1, Oct. 23, 1956, extended starting and completion dates.
   Amendment No. 2, Dec. 21, 1956, changed method of drilling from "churn" to "rotary" and costs.
   Amendment No. 3, Jan. 25, 1957, corrected minor details of units of work in Amendment No. 2.
   Amendment No. 4, May 13, 1957, revoked Amendment No. 3; deleted Stages II and III of contract; and set up 5,200 feet of rotary drilling in one stage.

3. Work under the contract started Jan. 1, 1957, and was completed April 30, 1957.

4. A certification of discovery or development was issued August 30, 1957.

5. Project Work:

   The original contract consisted of 1,850 feet of churn drilling, 50 feet of shaft sinking, 200 feet of crosscutting, 300 feet of drifting, and 150 feet of raising, in three stages at a total estimated cost of $30,725.00. By Amendment No. 4, the work and costs were changed to a one stage project as follows:

   Work Authorized:

Access roads and drill sites, bulldozer work, 63 hrs. @ $16/hr.	$1,008.00	
Rotary drilling, 5,200 ft. @ $2/ft.	10,400.00	
Chemical analyses for U_3O_8 content of 402 samples @ $3.50/sample	1,407.00	
Total Estimated Cost of Project		$12,815.00
Government Participation @ 75%		$ 9,612.00

   Work Completed:

Rotary drilling, 5200 ft. (more or less) @ $2/ft.	$10,396.01	
Bulldozer work, 63 hrs. @ $16/hr.	1,008.00	
U308 chemical analyses, 402 samples @ $3.50/each	1,407.00	
Total Actual Cost		$12,811.01

6. Audit Certificate dated August 5, 1957:

Total Cost as billed by contractor	$12,811.01
Exceptions	None
Total Accepted Costs	$12,811.01
Government Participation @ 75%	$ 9,608.25

7. Final Reports on Project:

Operator - received August 1,1957
Field Team, Region II -- received October 8, 1957

Excerpts from Operator's and Field Team's Final Reports:

The project area lies on the west slope of the Coso Mountains about 2 miles east of the central part of Haiwee Reservoir in Owens Valley.

The purpose of the project was to explore the Coso lake beds of Plio-Pleistocene age for uranium ore deposits.

The beds rest on a disintegrated granite in an uptilted fault block. The lake beds are as much as 280 feet thick, dip generally 10° to 20° W., and are composed chiefly of very poorly consolidated granitic debris which ranges in size from boulders as much as 4 feet in diameter to ? shale-size particles.

Thirty eight (38) holes were drilled vertically from the surface on approximately 200-foot centers to depths ranging from 29 to 305 feet.

The ~~project~~ drilling roughly deliniated one large deposit 6-39 feet thick, 1,400 feet long, and 1,000 feet wide, near the center of a lake bed and indicated two smaller deposits below the large one. The highest grade material penetrated, 0.25% U_3O_8, is near the center of the large deposit.

Ore Reserves:

Operator's:

1. Based on natural cut-off of the mineralized zone, 349,949 tons averaging .072% U_3O_8.

2. Based on 0.10% U_3O_8 cut-off ore grade, 78,927 tons averaging 0.128% U_3O_8.

Field Team 's:

1. 388,000 tons averaging 0.07% U_3O_8.

The Field Team notes that this deposit is perhaps the most significant uranium discovery in California, and as a result of the DMEA project other similar deposits along the west flank of the Coso range may be discovered. Preliminary metallurgical tests by the company indicate that the material can be upgraded and that the product may be amenable to leaching. However, at present, development and production are not economically feasible.

There has been no production since the date of the contract.

The work was completed in a very satisfactory manner, and the reports, including the Operator's final report are complete and acceptable by the Government.

The Field Team states that although additional exploration would probably disclose additional deposits of the tenor as those discovered, such work is not warranted at this time.

F. M. Murphy

F. M. Murphy, Mining Engineer
Division of Rare and Miscellaneous Metals

[X] Audited

WORK ANALYSIS SHEET - DMEA PROJECT

[X] Actual Cost

[X] Certified

Analysis as of Oct. 16, 1957
Incl. Voucher for April 1957

[ ] Agreed Unit Costs

Name Coso Uranium, Inc.

Docket No. 4191

State California

Commodity Uranium

Idm-E No. Idm-E994

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) Rotary	5200 ft.	10,400.00	5200	10,396.01	10 396.01
Surface Excavation					
Underground Excavation					
Roads and Trails (drill sites		1008.00		1008.00	1008.00
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) V_3O_8 analysis		1407.00		1407.00	1407.00
Totals		$12,815.00		$12,811.01	$12,811.01

Prepared by [signature]

71626

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

AUG 22 1966

Memorandum

To: The File

From: Chief, Office of Minerals Exploration

Subject: DMEA-4191 (Uranium)
Coso Uranium, Inc
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

The period during which production was subject to royalty expired August 21, 1966. In accordance with Mr. Selfridge's recommendation in his memorandum to the File dated March 1, 1966, the subject contract is considered closed.

Frank E. Johnson
Frank E. Johnson

cc; Director's Reading File
Division File
Economic Geology File
DMEA Docket
OME Reading File
Region II w/cy of Mr. Selfridge's memo of 3/1/66
Branch of Budget and Finance w/cy of Mr. Selfridge's memo of 3/1/66
120M

MMerrithew/mm ~~XXXXXXX~~ (8/22/66)

23263

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
3/1		120
		110
		220

March 1, 1966

Memorandum

To: The File

From: Assistant Chief, Office of Minerals Exploration

Subject: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

The subject contract, dated August 21, 1956, has ten years to run. The project was certified on August 30, 1957. In reply to a February 17, 1966, MME Form 63, the Operator stated that the assessment work on the unpatented claims had not been kept up to date because of the lack of funds. There has been no reported production from the property. The final Field Team report gives an estimate of 390,000 tons of mineralized material assaying 0.07 percent U_3O_8 in the area explored by 38 vertical rotary drill holes averaging 150 feet in depth.

Because development and production have not been economically feasible and would not be so during the short period remaining under the contract and as the claims have reverted to the public domain, it is recommended that no more MME Forms 63 be sent and that the contract be closed on its anniversary date.

George C. Selfridge

George C. Selfridge

cc to: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
Mr. Selfridge
120M

GCSelfridge/gla 3-1-66

23263

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

February 17, 1966

Re: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

Mr. Harry L. Lee
Coso Uranium, Inc.
c/o American Plant Protection, Inc.
2485 Long Beach Blvd.
Long Beach 6, California

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 28 1966

INITIALS	CODE
FE	~~120~~
2/28	120
	120
	120

Dear Mr. Lee:

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.

Please do not type signatures.

Sincerely yours,

Frank E. Johnson

Frank E. Johnson
Chief, Office of
Minerals Exploration

MME Form 63
Revised 7-65

DMEA-4191
Idm-E994

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since November 1964, 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 [X]

   Has the assessment work been kept up to date on all of the unpatented claims? If not, please give details. Yes /__/ No /X/

   No funds

2. Since November 1964, has there been any production from the land subject to the contract? Yes [ ] No [X]

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

	Quantity	Value

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

Type	Quantity		Estimated Grade	Location
Ore		Tons		
Concentrates		Tons		
Other		Tons		

3. Since ; has any production been transported through workings (see of contract)? Yes [ ] No [ ]

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

Disposition of Material	Quantity	Value

Submitted by:

Name Harry L. Lee Title Pres. American Plant Protection Inc

Address American Plant Protection Inc Date 2/21/66
2485 Long Beach Blvd
Long Beach, Calif.

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

November 3, 1964

REGISTERED MAIL
RETURN RECEIPT REQUESTED

Re: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

Mr. William J. Jans, Secretary
Coso Uranium, Inc.
c/o American Plant Protection, Inc.
2485 Long Beach Blvd.
Long Beach 6, California

Dear Sir:

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

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 13 1964

DATE	INITIALS	CODE
11/13	GEF	800
		100
11/16	GEJ	110
11/16	MMJ	120
		120
		620

MME Form 63
Revised 3-62

DMEA-4191
Idm-E994

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since September 1963, 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 ☒

   The corporation has been in an inactive status since 1961. Have had no communication with the other officers for several years.

2. Since September 1963, 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

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

Type	Quantity		Estimated Grade	Location
Ore		Tons		
Concentrates		Tons		
Other		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

Submitted by:

Name Harry L. Lee Title Vice-President

Address 2485 C Long Beach Blvd. Long Beach 6, Calif. Date November 9th, 1964

INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee

☐ Show address where delivered

(Additional charges required for these services)

RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Wm J. Jans

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

by Donna K. Anderson

DATE DELIVERED

11/9/61

SHOW WHERE DELIVERED *(only if requested)*

2485 Long Beach Blvd

CS5—16—71548-5—F G

f OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO
PAYMENT OF POSTAGE, $30

POSTMARK OF DELIVERING OFFICE

LONG BEACH
NOV 9
PM
1964
CALIF.

HELP GOODWILL INDUSTRIES
HELP THE HANDICAPPED

INSTRUCTIONS: Fill in items below ~~and complete~~ instructions on other side, if applicable. Moisten gummed ends, attach and hold firmly to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

REGISTERED NO. 8[illegible]598474	NAME OF SENDER **OFFICE OF MINERALS EXPLORATION**
CERTIFIED NO.	STREET AND NO. OR P. O. BOX **DEPT. OF THE INTERIOR**
INSURED NO.	CITY, ZONE AND STATE **WASHINGTON, D. C., 20240**

POD Form 3811 Apr. 1962

C55—16—71548-5—F

IMEA

4191

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

September 11, 1963

Re: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

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,

F M Murphy

F. M. Murphy, Acting Chief
Division of Minerals

OFFICIAL FILE COPY
O. M. E
RECEIVE SEP 19 1963

DATE	INITIALS	CODE
9/20		800
9/20		100
9/23	Murphy	500
		220

MME Form 63
Revised 3-62

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since December 6, 1962, 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 ☒

2. Since December 6, 1962, 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

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

Type	Quantity	Estimated Grade	Location
Ore	Tons		
Concentrates	Tons		
Other	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

Submitted by:

Name W. D. Jans Title Secretary

Address c/o MOBILE PLANT PROTECTION, INC. 2485 LONG BEACH BLVD. LONG BEACH 6, CALIFORNIA Date 9/16/63

4511

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

555 Battery Street
San Francisco, California

December 18, 1962

OFFICIAL FILE COPY
RECEIVED DEC 28 1962
DATE
12/27 Returned 500
Murphy
270

Memorandum

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

From: Acting Field Officer, OME, Region II

Subject: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups of Claims
Inyo County, California
Contract Idm-E994

Enclosed is the original of a Report of Review covering the subject contract.

This office agrees with the facts as stated in this report.

Paul V. Fillo

Enclosure

cc:
Chief, Division of Field Operations, OME, Washington, D. C.
Contract Administration and Audit Division, OME, Washington, D. C.

MME Form 7
(10-)

OFFICIAL FILE COPY

Date	Surname	Code
		220

December 12, 1962

Memorandum

To: Acting Field Officer, Region II

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

Subject: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups of Claims
Inyo County, California
Contract Idm-E994

The original and one copy 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 Administrative Services, Office of the Secretary, U. S. Department of the Interior, Washington 25, D. C.; and

(b) One copy for your files.

This Report of Royalty Review is made for record purposes only; therefore, no copy for the Operator is provided.

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

Enclosures

EDTalbert/ama 12-12-62

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

43683

#1-INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee

☐ Show address where delivered

(Additional charges required for these services)

4191

RETURN RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Coco [illegible] co

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Cecil a. Hamer

DATE DELIVERED	ADDRESS WHERE DELIVERED *(only if requested in item #1)*
12/1 [illegible]	

C55—16—71548-4 GPO

613

POST OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

LONG BEACH
DEC 11
5 30PM
1962
CALIF.

POSTMARK OF DELIVERING OFFICE

INSTRUCTIONS: Fill in items below and complete #1 on other side, when applicable. Moisten gummed ends and attach to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

REGISTERED NO. 598457	NAME OF SENDER MINERAL EXPLORATION
CERTIFIED NO.	STREET AND NO. OR P. O. BOX DEPT. INTERIOR
INSURED NO.	CITY, ZONE AND STATE WASH. 25, D.C.

POD Form 3811 Jan. 1958

C55—16—71548-4

~~Murphy~~

320

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

November 26, 1962

Re: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

REGISTERED MAIL
RETURN RECEIPT REQUESTED

Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

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,

W. R. Griswold, Chief
Division of Minerals

OFFICIAL FILE COPY
O. M. E
RECEIVE DEC 10 1962

DATE		CODE
12/11		800
12/11		100
12/11		~~110~~
12/11		500

MME Form 63
Revised 3-62

DMEA-4191
Idm-E994

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since December 31, 1958 , 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 ☒

2. Since December 31, 1958 , 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

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

Type	Quantity		Estimated Grade	Location
Ore		Tons		
Concentrates		Tons		
Other		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

Submitted by:

Name COSO URANIUM, INC. 2485 AMERICAN AVE. Title Secretary

Address LONG BEACH 6, CALIFORNIA Date 12/6/62

4511

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
5/26	Alley	800
5/26	a	220
5/27	[illegible]	700
		225

MAY 26 1959

Memorandum

To: Mr. George Maver, OME Auditor

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

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
Contract No. Idm-A994

Your Report of Royalty Review on the above-cited contract is acceptable and normal distribution is authorized.

AMAlley/ama
May 26, 1959

Copy to: Docket
Director's Reading File
CA & A Division

43683

DMEA-4191

1-30-59 [illegible]
[illegible] DMEA [illegible]

Semi-Annual Report
on
Certified projects for period: 7/1/58-12/31/58
Supplies strategic and critical materials

Commodity	Docket No.	Contract No.	Operator
Copper	DMA-67X	Idm-E 153	Marshall Mining Company
Corundum-Antimonite	DMEA-2512	Idm-E 457	Gerunda Corporation
Fluorspar	DMEA-3398	Idm-E 757	Kaiser Aluminum & Chemical Co.
Iron	DMEA-2853	Idm-E 646	Bessemer Iron Corporation
Lead-Zinc-Copper	DMEA-2257	Idm-E 442	Walker Corporation
Lead-Zinc	DMEA-436X	Idm-E 10	Bristol Silver Mines Co.
Lead-Zinc	DMEA-2309	Idm-E 298	Comet Mines, Inc.
Lead-Zinc	DMEA-1948	Idm-E 382	United Minerals Corporation
Lead-Zinc	DMEA-1949	Idm-E 382	United Minerals Corporation
Lead-Zinc	DMA-66X	Idm-E 464	Ely Valley Mines Company
Lead-Zinc	DMEA-2482	Idm-E 489	Raymond Combined Mines Co.
Lead-Zinc	DMEA-3428	Idm-E 774	Mt. Wheeler Mines, Inc.
Manganese	DMEA-3478	Idm-E 793	Petersen, Lowe, Bush, Chapman
Manganese	DMEA-3934	Idm-E911	Owl Springs Company
Mercury	DMEA-3541	Idm-E 766	Oceanic - leased to M.J. Maggini
Tungsten	DMA-239X	Idm-E 136	Cherry Creek Tungsten Mining Co. - sold to: American Fluor
Tungsten	DMEA-2082	Idm-E 248	Mt. Wheeler Mines, Inc.
Tungsten	DMA-861X	Idm-E 323	Northfield Mines, Inc.
Tungsten	DMEA-2528	Idm-E 481	M.I.A. Mines Company
Tungsten	DMEA-2581	Idm-E 505	Metallics Unlimited
Tungsten	DMEA-2925	Idm-E 521	Fred M. Anderson, et al. Property - sold to: Robt. M. Avery
Tungsten	DMEA-2820	Idm-E 586	Garnet Tungsten Mining Co. - leased to: Union Carbide Mining Co. (Knowles Bros., Assignees)
Tungsten	DMEA-3373	Idm-E 680	Lory M. Free, dba Y-Z Mining
Tungsten	DMEA-3263	Idm-E681	Incline Mining Company
Tungsten	DMEA-3294	Idm-E 713	William C. Morrison & Sons Restaked by: S. P. Morrison

Inactive certified [illegible] mine lost report, continued

Commodity	Docket No.	Contract No.	Operator
Tungsten	DMEA-3347	Idm-E 750	Idaho Maryland Mines Corp.
Tungsten	DMEA-3512	Idm-E 775	Wah Chang Mining Corporation
Tungsten	DMEA-3609	Idm-E 787	T.N.T., Inc.
Tungsten	DMEA-3657	Idm-E 798	El Capitan Mining Company
Tungsten	DMEA-3641	Idm-E 825	Malmar Mining & Milling Co.
Tungsten	DMEA-3702	Idm-E 871	J. Novinck and J.F. Emmons - (Apollo Mines, Inc., Assig[illegible] reverted back to owners)
Tungsten	DMEA-3609	Idm-E 905	Obsilah Mining Company
Tungsten	DMEA-4146	Idm-E 961	Hammetal, Inc., Assignee
Tungsten	DMEA-4240	Idm-E 979	Cordero Mining Co., Assignee
Uranium	DMEA-4191	Idm-E 994	Geco Uranium Company
Mine-Copper	DMEA-1219X	Idm-E 187	The Gilchrist Company
Mine-Copper	DMEA-3675	Idm-E 331	Copper Hill Mine Ventures

Inactive M + A.

A Form 7
2-56)

OFFICIAL FILE COPY

Date	Surname	Code
7/25	Murphy	700
7/25	Kubasek	700
7-28	Chambers	800
"	Johnson	110
"	Rickendorf	100
7/29	C	220
		700

JUL 28 1958

Mr. W. O. Merritt, President
Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E994
White Swan, et al., Groups
Inyo County, California

Dear Mr. Merritt:

This is with reference to my letter of August 30, 1957, enclosing a "Certification by the United States of America of a Discovery or Development Under an Exploration Project Contract."

The final audit on the subject contract has now been completed and reviewed. We wish to advise you that the Government retains a lien for the sum of $9,608.25 on any production from the property prior to August 21, 1966.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/izm 7-25-58
cc: Mr. Murphy
Admr.'s Reading File
DMEA FT Reg. 2 (2)

8623

EXTRA COPY
DMEA
RECEIVED AUG 4 1955
DATE | INITIALS | CODE
70C

Semi-Annual Report
on
Certified projects for period 1/1/55 - 6/30/55

Inactive since last report.

Commodity	Docket No.	Contract No.	Operator
Copper	DMA-47X	Idm-E 183	Marshall Mining Company
Corundum-Andalusite	DMEA-3512	Idm-E 457	Corundum Corporation
Fluorspar	DMEA-1396	Idm-E 727	Kaiser Aluminum & Chem. Corp.
Iron	DMEA-3263	Idm-E 664	Rosemner Iron Corporation
Lead-Zinc-Copper	DMEA-1357	Idm-E 442	Walker Corporation
Lead-Zinc	DMEA-428X	Idm-E 10	Detroit Silver Mines Co.
" "	DMEA-1948	Idm-E 302	United Minerals Corporation
" "	DMEA-1949	Idm-E 323	United Minerals Corporation
" "	DMA-44X	Idm-E 484	Sky Valley Mines Company'
" "	DMEA-3482	Idm-E 489	Raymond Combined Mines Co.
" "	DMEA-3441	Idm-E 434	L. D. Foreman, Mary R. Foreman, & Ida L. Gannon.
" "	DMEA-3428	Idm-E 774	Mt. Wheeler Mines, Inc.
Manganese	DMEA-3478	Idm-E 793	Peterson, Lewn, Rath, Campbell
"	DMEA-3984	Idm-E 911	Owl Springs Company
Mercury	DMEA-3485	Idm-E 379	Aubrey Mimmy
Tungsten	DMA-1377X	Idm-E 44	Wah Chang Mining Corp.
"	DMA-1189X	Idm-E 66	U.S. Tungsten Mines
"	DMA-229X	Idm-E 136	Cherry Creek Tungsten Min. Co.
"	DMEA-3[illegible]	Idm-E 348	Mt. Wheeler Mines, Inc.
"	DMA-861X	Idm-E 313	Northfield Mines, Inc.
"	DMEA-3[illegible]	Idm-E 481	M.L.A. Mines Company

Inactive since last report. (cont'd.)

Commodity	Docket No.	Contract No.	Operator
Tungsten	DMEA-2801	Idm-E 505	Metallics Unlimited
"	DMEA-2925	Idm-E 521	Fred M. Anderson, et al. Property, sold to: Robt. N. Avery.
"	DMEA-2820	Idm-E 556	Garnet Tungsten Mining Co. (Knowles Bros., Assignee)
"	DMEA-2919	Idm-E 619	Strawberry Tungsten Mines, Inc.
"	DMEA-3273	Idm-E 680	Lory M. Free, dba Y-Z Mining Co.
"	DMEA-3253	Idm-E 681	Incline Mining Company
"	DMEA-3194	Idm-E 713	William C. Morrison & Sons
"	DMEA-3247	Idm-E 750	Idaho Maryland Mines Corp.
"	DMEA-3609	Idm-E 787	T.N.T., Inc.
"	DMEA-3637	Idm-E 788	El Capitan Mining Company
"	DMEA-3782	Idm-E 871	J. Noviack and J.F. Barnes (Apollo Mines, Inc., Assignee) reverted back to owners)
"	DMEA-3659	Idm-E 905	Obelisk Mining Company
Uranium	DMEA-4191	Idm-E 994	Gene Uranium Company
Zinc-Copper	DMEA-1219X	Idm-E 187	The Glidden Company
" "	DMEA-2495	Idm-E 331	Copper Hill Mine Venture

A Form 7
-56)

OFFICIAL FILE COPY

Date	Surname	Code
2/24	Murphy	700
2/24	Ellis	700
2/24	Johnson	110
"	Mittendorf	100
2/25	C	220
		700

FEB 24 1958

Mr. Jesse C. Johnson
Director, Division of Raw Materials
Atomic Energy Commission
1717 H Street, N.W., Room 800
Washington 25, D. C.

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Johnson:

With reference to our letter of August 30, 1957, advising you that the subject exploration project had been certified, the data relating to the project, which has now been completed, are as follows:

Property: Twenty three unpatented lode mining claims, White Swan Nos. 1 through 10, Linda Sue Nos. 1 through 5, and Esther Nos. 1 through 5, situate in secs. 24 and 25, T. 20 S., R. 37 E., and in secs. 24 and 25, T. 20 S., R. 37½ E., M.D.B.M., Inyo County, California.

Estimated Cost of Work Authorized:	$30,725.00
Actual Cost of Work Completed:	$12,811.01
Government Participation @ 75%:	$9,608.25
Ore Reserves Discovered:	388,000 tons averaging 0.07% U_3O_8

Thirty-eight churn drill holes were drilled on approximately 200-foot centers. The depths of the holes ranged from 29 to 305 feet.

The drilling roughly delineated one large deposit ranging from 6 to 39 feet in thickness, over a length of 1,400 feet and a width of 1,000 feet near the center of a Plio-Pleistocene lake bed; and indicated two smaller deposits below the large one. The highest grade material penetrated is near the center of the large deposit. Assays of this material showed 0.25 percent U_3O_8.

There has been no production from the property to date.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/izm 2-24-58
cc: Mr. Murphy
Admr.'s Reading File
Frank E. Johnson
Frank D. Lamb, Rm. 3608

THKiilsgaard, 5224
DMEA Ft Reg. 3 (2)

8623

February 21, 1958

Memorandum

To: Wingfield H. Chamberlain
Statistics Branch

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

Subject: Semi-Annual Report of Certified Project
Period July 1 to December 31, 1957

This Division has received reports on the following projects indicating there has been no activity and conditions are unchanged since the previous report:

Project	Contract No.	Operator	Commodity
DMRA-1702	Idm-261	Champion Mines	Uranium
DMRA-2419	Idm-2299	David Hamilton, A. H. Kieslain, et al.	Uranium
DMRA-2781	Idm-2584	Verlon W. Vanderveter	Manganese
DMRA-2891	Idm-2545	J. R. Simplot Company	Columbium, tantalum, uranium
DMRA-3032	Idm-2631	Rare Earths Mining Company	Rare Earths
DMRA-4101	Idm-2999	Sego Uranium Company	Uranium

Ernest Wm. Ellis

Ernest Wm. Ellis

ACTION ON INTERIM
AND FINAL FIELD TEAM REPORT

Date 2/4

Referred to:

1. ~~Mr. Wittedorf~~
2. ~~Mr. Lochbach~~
3. ~~Miss Chambers~~
4. Docket Control Mails and Files
5. ~~Division~~
6. Docket Control Mails and Files

7 - 700

Note comments in report regarding:

1. I kept a copy of
2. this - to include
3. this project on the
4. inactive list for Chamberlain.

and take appropriate action. gla

- - - - - - - - - -

Action taken by Division:

Robert E. Adams

SEMI-ANNUAL REPORTS OF CERTIFIED PROJECTS

Reporting Period 7/1/57-12/31/57 Date of Examination 12/31/57

Operator Coso Uranium Company

Mine Name White Swan, et al. Claims

County and State Inyo County, California

Docket Number and Commodity DMEA-4191 (Uranium)

Contract Number Idm-E 994

2/4 C 220

Date of Contract 8/21/56

Date of Certification 8/30/57

Expiration Date of Royalty Payments 8/21/66

Total Amount of Contract $30,725.00

Total Expenditures under Contract $12,811.01

Amount of Government Participation at 75% $9,608.25

Royalty Payments this Period 0

Previous Royalty Payments 0

Total Royalty Payments to Date 0

Percent Government Participation Repaid 0

Royalty Due on Production to Date 0

Royalty Remarks:

DMEA-4191 Idm-E 994

						ons	Analysis
Original Estimate of DMEA Reserves (Field Team Final Report)							
Mines	[ ]	Survey	[ ]	Joint	[x]	390,000	0.07% U_3O^8
Revised Estimate of DMEA Reserves (Field Team)							
Mines	[ ]	Survey	[ ]	Joint	[ ]		
Increase of Reserves by work performed subsequent to DMEA project work							
Production DMEA ore				(This Period)			
				(Previous)			
				(To date)			
Operator's ore found subsequent to DMEA work				(This period)			
				(Previous)			
				(To date)			

Percent Revised Reserves mined 0

Investment Data

Shafts			Winzes			Drifts & Crosscuts		
Size	Feet	Cost	Size	Feet	Cost	Size	Feet	Cost

Raises			Drilling			Rehabilitation	
Size	Feet	Cost	Type & Size	Feet	Cost	Description	Cost

Facilities

Mine Plant		Mill		Roads	
Description	Cost	Description	Cost	Description	Cost

Remarks

The property is now idle.

Signed B. H. Sheahan (Engineer)
B. H. Sheahan

IN REPLY REFER TO:

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

November 26, 1957
Re: DMEA 4191 Idm-E994
Coso Uranium, Inc.
White Swan, etc. Groups
Inyo County, California
Uranium

Memorandum

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

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Final Report

The contract, awarded August 21, 1956, approved the expenditure of $12,815.00 on the exploration by dry rotary drilling of poorly consolidated lake beds overlying weathered granite, to determine the content of secondary uranium minerals, chiefly uranophane and autunite.

The drilling, which cost $12,811.01 resulted in the 'discovery' of 390,000 tons of 0.07% U_3O_8 as estimated by the examiners. In its Final Report, the operator estimated the reserves at:-

349,849 tons of 0.72% U_3O_8
or 402,000 " " 0.65% U_3O_8 as

diluted by 15% offgrade material above and below the ore-bearing beds.

A certification was made August 30, 1957.

N. E. Nelson

N. E. Nelson

ORIGINAL COPY
DMEA
RECEIVED NOV 26 1957

DATE	INITIALS	CODE
11/27	gb	220
		200

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1605 Evans Avenue
Reno, Nevada

October 4, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 8 1957

DATE	INITIALS	CODE
10/8	C	220
	dsf	130
10/8	[illegible]	110
10/11	[illegible]	130
10/14	C	220
15	com	100

Memorandum

To: Operating Committee, DMEA, Interior Building
Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E 994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Enclosed are four copies of our final report on subject contract by B. H. Sheahan, Bureau of Mines, and R. M. Smith and D. B. Tatlock, Geological Survey.

S. Ricker

Attachments

Reviewed by
DMEA OPERATING COMMITTEE
10-11-57
(date)

FT. FINAL REPORT

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 8 1957

DATE	INITIALS	CODE
10/11	2/B	130
		220

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

FINAL REPORT

DMEA-4191, Contract Idm-E994 (Uranium)
Coso Uranium, Inc.
Coso mine (White Swan et. al. claims)
Inyo County, California

by

B. H. Sheahan
U. S. Bureau of Mines

R. M. Smith and
D. B. Tatlock
U. S. Geological Survey

October 2, 1957

Reviewed by
DMEA OPERATING COMMITTEE
10-11-57
(date)

CONTENTS

	Page
Introduction	1
Summary	1
Conclusions and Recommendations	2
Location, Accessibility, and Local Facilities	3
History, Property, Development, and Ownership	4
The DMEA Project	5
Geology	7
Ore Deposits	9
Sampling	12
Ore Reserves	16

ILLUSTRATIONS

Figure 1 . . . . . Index map

2 . . . . . Surface geologic map

3 . . . . . Plan of explored area

4 . . . . . Drill logs and sections

INTRODUCTION

The Coso mine, also known as the White Swan et. al. claims, near Olancha, Inyo County, California, was explored by Coso Uranium Inc., 2485 American Avenue, Long Beach 6, California, with assistance from Reese H. Taylor, Jr. and Associates in cooperation with the Defense Minerals Exploration Administration, docket DMEA-4191, contract Idm-E994 dated August 21, 1956.

Expenditures under the contract were $12,811.01, of which the Government's participation at 75 percent was $9,608.25. Expenditures in excess of those authorized were paid by the operator and his associates. Exploratory drilling was started January 1, 1957 and was completed April 30, 1957. A certification of discovery was issued August 30, 1957, which places a lien on the property until August 21, 1966.

Work was inspected by B. H. Sheahan, U. S. Bureau of Mines, and D. B. Tatlock, U. S. Geological Survey. The final audit of the account, by George Mavor, DMEA auditor, is dated August 5, 1957.

SUMMARY

The purpose of the project was to explore for secondary uranium minerals in the middle and lower lake beds of the Coso formation. Exploration was justified by inferred reserves of

approximately 110,000 tons averaging 0.05 and 100,000 tons averaging 0.17 percent U_3O_8, by the amenability of the material to upgrading, and by the possibility that several million tons might be found in the same geologic setting elsewhere in the district. The deposit had the best indications of ore in appreciable quantities of any found along the west flank of the Coso range.

Exploration consisted of 38 vertical rotary-drill holes averaging 150 feet in depth from surface locations. All work was done by independent contractors under the general supervision of Mr. Emmet R. Cullity, consulting engineer.

The project was successful in delineating indicated reserves of 390,000 tons averaging 0.07 percent U_3O_8 in the target area. No production was made and the property is now idle.

CONCLUSIONS AND RECOMMENDATIONS

This deposit is perhaps the most significant uranium discovery in California, and as a result of the DMEA project other similar deposits along the west flank of the Coso range may be discovered.

The contract area was adequately explored and although additional reserves of the same tenor could probably be discovered further exploration is not warranted at present because development and production are not now economically feasible. Preliminary

metallurgical tests by the company indicate that the material can be upgraded and that the product may be amenable to leaching. The greatest factor in planning future production is the high stripping ratio.

As no production has been made no royalties are due the Government. A certification of discovery has been issued.

LOCATION, ACCESSIBILITY, AND LOCAL FACILITIES

The Coso Uranium Inc. claims are on the west slope of the Coso range in secs. 24 and 25, T. 20 S., R. 37 E., and in secs. 24 and 25, T. 20 S., R. 37-1/2 E., M.D.B.&M., Inyo County, California (fig. 1).

The property is accessible all year with a passenger car. To reach the mine office from Lone Pine, California, the nearest city, travel south 25 miles on U. S. Highway 395, then left 10.7 miles on the Cactus Flat road, the first 1.4 miles of which is paved, on a sandy desert road which is posted to the mine office. The total distance from Lone Pine is 35.7 miles.

The nearest railroad siding is 11.5 miles, and the nearest source of water is 10.5 miles in the vicinity of Olancha, California. There are no housing facilities at the mine.

HISTORY, PROPERTY, DEVELOPMENT, AND OWNERSHIP

The first uranium showings were discovered December 11, 1954 by Ed Dodge of Olancha, William I. Brainard of Lone Pine, and Jack Burkhardt of Lone Pine, while searching for bentonite deposits.

The property includes 26 unpatented mining claims (less three claims subsequently relinquished to avoid litigation). The locators have assigned the claims to the corporation, receiving stock in payment. A list of the claims held by the corporation, and recorded at Independence, California, follows:

White Swan Nos. 1 to 10	book 69, pages 538-672
Linda Sue Nos. 1 to 5	book 69, pages 543-551
Helen Faith Nos. 1 to 6	book 69, pages 593-603
Esther Nos. 1 to 5	book 69, pages 605-613

A second recording was made May 3, 1955 in book 72, pages 3 to 161. The three claims relinquished are the White Swan No. 8, Helen Faith No. 6, and Esther No. 3. The claims were staked by the locators but are not surveyed.

Development consists of eight adits from 10 to 75 feet in length, and by a 65-foot inclined shaft. Very little timber has been used for ground support, but would be necessary if extensive mining were done

in the Coso formation, or along the irregular contact between this bedded formation and the granite.

THE DMEA PROJECT

Exploration proposed in the original contract was in three stages and comprised 1,850 feet of churn drilling, 50 feet of shaft sinking, 300 feet of drifting, 200 feet of crosscutting, and 150 feet of raising. The contract was amended to provide for only dry rotary drilling under a single stage.

Exploration completed consisted of 2 miles of access roads to the drill sites, of 5,791 feet of rotary drilling in 38 holes (figs. 2-3), of sampling the cuttings, and of radiometric probes of the holes. Of the total footage 5,200 feet was on DMEA account and 591 feet was at the operator's expense. All of the holes were 4-1/2 inches in diameter, drilled on approximately 200 foot centers vertically from the surface through the lake beds and a few feet into the underlying granite. They ranged from 29 to 305 feet in depth and averaged 152 feet.

Mr. Emmet R. Cullity, consulting engineer for Reese H. Taylor and Associates, obtained the services of Colorado Exploration Company of Golden, Colorado, who had the necessary equipment and were experienced with dry rotary drilling. Mr. John A. Holmquist, geologist for Colorado Exploration Company, efficiently supervised the field work and compiled most of the drill logs, sample data, radiometric probes, and reports.

The last five holes (204, 205, 206, 207, and 208) were completed by Mullen Buckley Uranium Corporation as an independent contractor. This portion of the work was done with the same equipment and with the same drill as previously. It was under field supervision of Mr. Conrad Housley, geologist.

Mr. Emmet R. Cullity compiled the operator's final report and was present at the final audit of the account.

The following amendments to the contract were made:

No.	Date	Provisions
1	10/23/56	Extended starting date.
2	12/21/56	Substituted dry rotary drilling for churn drilling.
3	1/25/57	Corrected minor details of units of work in Amendment No. 2.
4	5/13/57	Authorized 1,000 feet of additional dry rotary drilling.

Expenditures

Total amount of contract.	$12,815.00
Total expenditures	12,811.01
Government's share of cost	9,608.25
Government's share unexpended	3.00
Value of production during operations. . . .	None
Royalty paid to the Government	None

Unit Costs

(1) Independent Contracts $10,396.01

Dry rotary drilling, 38 holes,
diameter 4.5 inches, 5,200 feet,
unit cost approximately $2.00/ft.

(2) Operating Equipment rental . . . . . $ 1,008.00

Trail construction, 2 miles,
bulldozer rental 63 hrs. @ $16.00/hr.

(3) Chemical analyses for U_3O_8,
402 samples @ $3.50/ea. . . . . $ 1,407.00

Total. $12,811.01

Equipment

All equipment was provided by the independent contractors. No purchases were authorized by the contract.

Drilling was done with a Failing 1500, truck-mounted, combination drill using compressed air for the drilling medium.

GEOLOGY

The Coso uranium claims are underlain by clastic lake bed sediments and younger porphyritic andesite flows that were deposited on a highly irregular, jointed, and faulted granite surface inclined to the west.

The granite is chiefly coarse-grained alaskite of Cretaceous age that has been intruded by dikes of biotite granite as much as 50 feet wide. Two sets of joints are prominent in the granite. One

set strikes north-northeast and dips steeply east, the other strikes west-northwest and dips steeply south. The biotite granite dikes are, in general, parallel with the west-northwest joints. The joints seem to have controlled the erosional irregularities in the old granite surface.

The overlying Coso lake beds of Plio-Pleistocene age are as much as 280 feet thick, dip generally 10° to 20° W., and are composed chiefly of very poorly consolidated granitic debris which ranges in size from boulders as much as 4 feet in diameter to shale-size particles. Some volcanic ash is interbedded high in the Coso section. Lake beds range from a fraction of an inch to several feet in thickness; graded bedding and crossbedding are common. The beds are finer-grained and more distinctly bedded and homogeneous away from the old shore line and higher in the section. Locally along the old shore line it is difficult to pick the contact between poorly bedded near shore facies of lake bed material and weathered granite.

Colluvium occurs intermittently above the eastern margin of the lake beds and probably ranges in age from at least Pliocene to Recent. It contains angular blocks of granite ranging from a few inches to as much as 10 feet across in a matrix of silt, sand, and pebbles. Most of it is firmly cemented and is stained with iron and manganese oxides.

Porphyritic andesite flows of Pleistocene age overly the Coso beds north of and west of the mine area. The andesite immediately west of the mine covers a collapsed volcanic vent about 16,00 feet in diameter into which immediately adjacent lake beds and granite have slumped (fig. 2, N 47700, E 43300). Extending south-southwest from the collapsed vent is a distinct monoclinal flexure (N 45500, E 43200) along which the lake beds dip from 35° to 45° W. in contrast to the regional dip of 10° to 20° W.

The Coso lake beds in the explored area are in an embayment in the old granite surface (fig. 2, N 46600, E 45000), herein referred to as the Coso embayment. Within the embayment, beds low in the Coso section were probably deposited in channelways between granite knobs on the irregular pre Coso erosion surface. The lake beds are bordered on the north, east, and south by granite, and on the west by the collapsed volcanic vent. A normal fault that dips about 50° E. trends north-northeasterly along the eastern margin of the collapsed area; the dip slip on this fault is from 10 to 20 feet, as seen in the lake beds.

ORE DEPOSITS

Secondary uranium minerals, chiefly uranophane and autunite, are disseminated in permeable lake beds and in weathered granite in

three stratigraphic positions: (1) in the weathered granite of the pre Coso erosion surface, (2) in the basal Coso beds at the granite contact, and (3) in coarse-grained porous beds higher in the Coso section. All of the known uranium deposits on the Coso property are in or around the flanks of the Coso embayment. Similar deposits along the granite ridge are on adjacent properties.

The ore minerals are uranophane, autunite, and uranopilite (?). Gangue minerals are iron oxides, some manganese oxides and opal, and locally white- to black chalcedonic quartz and minor pyrite. The ore minerals are believed to have been deposited from ground water solutions that derived uranium from primary uranium minerals in the granite.

Deposits in the weathered granite have been explored in two places and 75 tons of selected material averaging 0.19 percent U_3O_8 was mined. Deposits in the basal Coso beds at the granite contact were explored in two places relatively high on the flanks of the embayment and a few tons assaying as high as 0.21 percent U_3O_8 was mined but ore in commercial quantities was not found. It is possible that deep channelways along depressions in the floor of the embayment contain commercial deposits but these have not been explored. Deposits in porous beds higher in the Coso section contain the greatest tonnage of uraniferous material and these were explored by the DMEA project.

The project roughly delineated one large deposit near the center of the Coso formation overlain by about 100 feet of lower grade or barren overburden, and indicated two smaller deposits below the large one (fig. 4). The large ore body is 6-39 feet thick, irregular in shape, and at its extremities is about 1,400 feet long and 1,000 feet wide. The two deeper ore bodies, one 22 feet thick cut in hole 206, and the other 18 feet thick cut in hole 26, were not cut by adjacent holes 200 feet away and the lateral extent was not determined, but they are assumed to extend 50 feet from the drill holes.

The highest grade material is 0.25 percent U_3O_8 and is near the center of the deposit, but the average grade of all three of the deposits is 0.07 percent U_3O_8 using a cutoff of 0.04 percent U_3O_8. Above and below the main deposit the lake beds commonly contain layers 5 to 50 feet thick that average 0.01 to 0.04 percent U_3O_8 interlayered with others that are barren. Around its periphery the main deposit is not continuous but en echelon layers as much as 50 feet thick averaging 0.01 to 0.04 percent U_3O_8 extend several hundred feet. The top 60 feet of almost all of the holes is barren or averages less than 0.01 percent U_3O_8.

SAMPLING

Rotary drill cuttings were collected at three-foot intervals with a Duclone-type separator. Each sample was checked for radioactivity and was then split into four equal parts. One part was used for analytical purposes and the remainder is stored at Olancha, California. The operator had 640 samples analyzed chemically for U_3O_8 and results are included in his monthly reports. Most of the samples contained less than 0.04 percent U_3O_8 and only those used in ore reserve calculations are listed.

Drill Hole No.	Collar elev.	Depth, feet	Coordinates North	Coordinates East	Remarks
0-A	4567.7	29	47167	44358	
1	4625.6	69	47114	44604	
2	4676.0	67	47071	44800	
3	4725.6	45	47031	44995	
7-A	4612.6	180	47211	44159	
8	4651.9	127	46985	44269	
8-A	4651.9	163	46995	44270	127 ft. not claimed by independent contractor.
9	4674.3	142.5	46941	44465	
10	4712.6	153	46900	44659	
11	4724.9	64	46857	44854	
12-A	4739.4	54	46876	45054	
16	4891.8	79	46599	45108	
17	4829.3	100.5	46639	44910	
18	4786.2	199	46681	44715	
19	4729.8	264	46729	44521	
20	4681.6	258	46769	44326	
23	4817.8	85	46423	44968	
24	4793.5	95	46468	44771	
25	4755.4	213	46508	44577	
26	4724.5	290	46549	44381	
27-A	4639.2	191	46591	44196	
28	4609.9	120	46419	44048	
28-A	4609.9	277	46439	44046	120 ft. not claimed by independent contractor.

Drill Hole No.	Collar elev.	Depth, feet	Coordinates North	Coordinates East
29	4680.5	171	46373	44243
30	4724.5	200	46332	44439
31-A	4745.1	131	46328	44640
32-A	4780.6	54	46302	44835
41-A	4530.0	63	47387	44289
42-A	4575.1	202	47430	44085
200	4596.9	159	46805	44130
201	4587.3	165	47025	44071
202	4576.2	177	47242	44012
203	4565.1	122	46849	43930
204	4514	165	47067	43900
205	4502	198	47283	43838
206	4485	231	47498	43782
207	4570	183	46900	43697
208	4509	305	47718	43723
Sub-total: 38 holes		5,791		

Hole No.	Interval, feet	Percent U_3O_8	Remarks
0-A	--	--	Assay less than 0.03
1	6-9	0.07	
	9-12	0.04	
	12-18	0.02	
	18-21	0.04	
2	--	--	Low count, no assays.
3	--	--	Low count, no assays.
7-A	84-87	0.08	
	87-90	0.13	
	90-93	0.11	
	93-96	0.07	
	96-99	0.05	
	99-102	0.08	
	102-105	0.06	
	105-108	0.05	
	108-117	0.04	
8	57-60	0.09	
	60-63	0.22	
	63-66	0.20	
	66-69	0.07	
	69-72	0.05	
	72-75	0.05	
	75-78	0.04	

Hole No.	Interval, feet	Percent U_3O_8	Remarks
8	78-81	0.05	
	81-84	0.06	
	84-87	0.05	
	87-90	0.04	
	90-93	0.05	
	93-96	0.04	
8-A	135-138	0.06	
9	75-78	0.09	
	78-81	0.25	
	81-84	0.10	
	84-87	0.09	
	87-90	0.08	
10	90-93	0.04	
	93-96	0.04	
11	48-51	0.04	
12-A	--	--	Low count, no assays.
16	--	--	Assays less than 0.03
17	--	--	Assays less than 0.03
18	--	--	Assays less than 0.02
19	144-147	0.04	
20	75-78	0.08	
	78-81	0.08	
	81-84	0.07	
	84-87	0.07	
	87-90	0.05	
	90-93	0.05	
	93-96	0.04	
	96-99	0.16 ✓	
	99-102	0.05	
	102-105	0.08	
23	--	--	Assays less than 0.02
24	--	--	Assays less than 0.02
25	126-129	0.05	
26	138-141	0.06	
	141-144	0.04	
	156-159	0.04	
	159-162	0.04	
	162-165	0.04	
	165-168	0.04	

Hole No.	Interval, feet	Percent U_3O_8	Remarks
26	168-171	0.05	
	171-174	0.04	
	195-198	0.05	
	213-216	0.04	
	234-237	0.05	
	237-240	0.04	
	240-243	0.09	
	243-246	0.12	
	246-249	0.09	
	249-252	0.05	
27-A	69-72	0.04	
	72-76	0.05	
28	--	--	Low count, no assays.
28-A	--	--	Low count, no assays.
29	--	--	Assays less than 0.02
30	108-111	0.03	
	111-114	0.05	
	135-138	0.04	
31-A	--	--	Assays less than 0.02
32-A	--	--	Assays less than 0.02
41-A	--	--	Low count, no assays.
42-A	72-75	0.04	
	78-81	0.04	
	81-84	0.05	
	84-87	0.05	
	87-90	0.04	
200	48-51	0.04	
	54-57	0.09	
	57-60	0.13	
	60-63	0.06	
201	75-78	0.04	
	78-81	0.06	
	81-84	0.05	
	93-96	0.04	
202	78-81	0.05	
	102-105	0.04	
	108-111	0.06	
	111-114	0.05	
	114-117	0.04	
	120-123	0.06	

Hole No.	Interval, feet	Percent U_3O_8	Remarks
203	69-72	0.05	
	81-84	0.04	
	84-87	0.05	
	87-90	0.07	
	102-105	0.05	
	108-111	0.06	
	111-114	0.07	
204	--	--	Low count, no assays
	75-78	0.04	
	78-81	0.05	
	81-84	0.05	
	84-87	0.04	
205	147-150	0.04	
	150-153	0.04	
	156-159	0.04	
	183-186	0.04	
	186-189	0.04	
	189-192	0.06	
	192-195	0.04	
206	210-218	0.09	
	218-225	0.08	
	225-228	0.04	
	228-231	0.05	
	231-232	0.06	
207	147-150	0.04	
	150-153	0.04	
	156-159	0.04	
208	--	--	Low count, no assays

ORE RESERVES

Except for a few hundred tons in layers 6 feet or less thick near the center of the deposit there are no reserves of ore grade (0.2 percent U_3O_8). The operator estimates indicated reserves of 388,000 tons averaging 0.07 percent U_3O_8. A cutoff grade of 0.04 percent U_3O_8, and a volumetric equivalent of 17 cubic feet per ton was used in making the calculations.

Tonnage and grade calculations were made for each row of holes as indicated on the plan and sections. A summary of this data follows:

(1) Main zone

Cross section	Area, sq.ft.	Control distance	Cubic feet	Tons	Percent U_3O_8	Grade X tons
A	-	-	-	-	-	-
B	-	-	-	-	-	-
C	11,475	199	2,283,525	134,325	0.066	8,865.45
D	12,040	201	2,420,040	142,355	0.800	11,388.40
E	6,750	199	1,343,250	79,014	0.064	5,056.89
F	2,400	102	244,800	14,400	0.045	648.00
			Sub-total:	370,094 tons averaging 0.07 percent		

(2) Deep zone

B	(hole 26)	50 ft. radius	8,311	0.065
F	(hole 206)	50 ft. radius	10,160	0.073
		Total and average:	388,000 tons averaging 0.07 percent	

This estimate is conservative as the southern extremity of the deposit (secs. A and B) is not included, nor is any tonnage included from small lenses above the main deposit. A cutoff grade of 0.03 percent might be expected to more than double the reserve estimate.

The value of the reserves at the current price of $3.50 per pound, which assumes upgrading to 0.2 percent, is $1,901,200 for the 543,200 pounds of contained U_3O_8.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-6	Murphy	700
8-6	Ellis	700
	Butin	140
	Sawyer	140
8/6	Gilbert	800
8/9	Martin	130
8/30	Johnson	110
"	Mittendorf	100
9-3	C	220
		700
8/9	Jones	130
8/9	Gibson	130

AUG 30 1957

Mr. W. O. Merritt, President
Coso Uranium, Inc.
2485 American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E994
White Swan, et al., Groups
Inyo County, California

Dear Mr. Merritt:

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 Article 2 of the subject contract.

By the terms of the Exploration Project Contract, as amended, and of the certification, all minerals mined or produced from August 21, 1956, to August 21, 1966, are subject to the Government's percentage royalty as set forth in the contract until the amount contributed by the Government is repaid.

Payments should be made to Mr. Spangler Ricker, Executive Officer, DMEA Field Team, Region II, 1605 Evans Avenue, Reno, Nevada. 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. Ricker 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. Ricker at six-month intervals that no production has been made, when that is the case.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure

FMMurphy/izm 8-6-57
cc to: Admr.'s Reading File
F. E. Johnson
Operating Committee
Frank D. Lamb, Rm. 3608
THKiilsgaard, Rm. 5224
Field Team, Region II (2)
Contract Adm. & Audit Division
Mr. Murphy

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-6	Murphy	700
8-6	Ellis	700
		140
		140
8/6	Talbut	800
8/9	Martin	130
8/30	Johnson	110
"	Mittendorf	100
		220
8/9	Yoges	700
		130
8/9	Nelson	130

AUG 30 1957

Mr. Jesse C. Johnson
Director, Division of Raw Materials
Atomic Energy Commission
1717 H Street, N. W., Room 800
Washington 25, D. C.

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Johnson:

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

The final report of the Field Team has not been completed. Accordingly, we will supply additional information for your records upon receipt of this report.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

Enclosure

FMMurphy/izm 8-6-57
cc to: Admr.'s Reading File
F. E. Johnson
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Field Team, Region II (2)
Contract Admr. & Audit Division
Code 700, Mr. Murphy

8623

DMEA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1605 Evans Avenue
Reno, Nevada

August 28, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building
Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.,
White Swan, et al., Groups
Inyo County, California
Contract No. Idm-E 994

Reference is made to your letter of August 12, 1957 on subject contract.

A certification will be recommended in our final report which is currently being prepared. Tonnage estimates will be in the order of the Operator's final report which was sent to you under cover of our memorandum of July 30, 1957.

S. Ricker

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 30 1957

DATE	INITIALS	CODE
8/30	C	220
4	FM	700

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/12	Fisher	800
8/13	G.	220
		700

AUG 12 1957

Mr. George Mavor
DMEA Auditor
420 Custom House
555 Battery Street
San Francisco 11, California

Re: Audit Report
Coso Uranium, Inc.
Contract Idm-E994
Docket No. DMEA-4191

Dear Mr. Mavor:

The recently submitted copies of the Audit Report and Audit Certificate covering the above-cited project are accepted and normal distribution is authorized.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

CEFisher/wb
August 12, 1957

Copy to: Docket
Admr. Reading File
Mr. Chambers

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/9	Murphy	700
"	Kirkwood	700
8/9	Martin	130
"	Johnson	110
"	Rutherford	100
8/12	O.	220
		700

AUG 12 1957

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Ricker:

Will you kindly advise this office as soon as possible whether or not the Region II Field Team will recommend a certification of the above-referenced project in its final report.

Sincerely yours,

W. S. Martin

ACTING Chairman, Operating Committee

APPROVED:

P. F. Yopes
Member, Bureau of Mines

N. E. Nelson
Member, Geological Survey

FMMurphy/gla
8-9--57

cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr. Murphy
THKiilsgaard, Rm. 5224

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7/31	Fisher	800
8/1	C	220
		700

JUL 31 1957

Mr. George Mavor
DMEA Auditor
420 Custom House
555 Battery Street
San Francisco 11, California

Re: Contract No. Idm-1994
Docket No. DMEA-4191
Coso Uranium, Inc.

Dear Mr. Mavor:

Reference is made to your letter dated July 23, 1957, pertaining to audit of costs applicable to the subject exploration project contract.

This letter indicates that the actual cost of the exploration project was in excess of the costs claimed for Government participation under provisions of Amendment No. 4 and that such costs were fully substantiated by records of Reese H. Taylor, Jr. & Associates made available for your inspection. Presumably the work was accomplished in a manner satisfactory to the Government.

Your audit report containing reference to the agreement dated December 10, 1956, and a brief explanation of the records made available for audit will be acceptable.

The attachments to your letter are returned herewith.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

Enclosure

CEFisher/wb
July 31, 1957

Copy to: Docket
Admr. Reading File
Mr. Ricker
Mr. Chambers

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1605 Evans Avenue
Reno, Nevada

July 30, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building
Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract No. Idm-E 994

Enclosed are three copies of the Operator's final report on subject contract.

S. Ricker

Attachments

OFFICIAL FILE COPY DMEA RECEIVED AUG 1 1957		
DATE	INITIALS	CODE
8/1	P.K.	220
8/1	[illegible]	800
~~8/1~~	~~FMM~~	~~900~~

cc sent to USGS - 8-5-57

OP's. FINAL REP.

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 1 1957

DATE	INITIALS	CODE

FINAL REPORT

DMEA No. 4191 (Uranium)
Contract No. 1dm-5994. Stage I As Amended
Coso Uranium, Inc.
Coso mining property, located 10 miles southeast of Olancha, California and 200 miles north of Los Angeles

Exploratory drilling in this project was begun January 1, 1957 and completed April 30, 1957 as follows:

Actual Costs

Stage 1

	DMEA Allowable Units	DMEA Allowable Cost	Actual Work Units	Actual Work Cost
Category (1) Independent Contract Rotary drilling, including full-time services of geologist-supervisor	5200 ft.	$10,400.00	*5544 ft.	$11,321.60
Category (4) Operating Equipment Sub category (a) Dozer Rental	63 hrs.	1,008.00	126.7 hrs.	1,814.22
Category (7) Miscellaneous Chemical analysis for U_3O_8	402 samples	1,407.00	640 samples	2,644.14
		$12,815.00		$15,780.16

*These units and costs are corrections of the 5633 feet and $11,198.60 reported under "Remarks" in final voucher Form ER-164A.

Comprehensive reports of the geologic features of the Coso property and of the drilling program have heretofore been submitted to DMEA together with pertinent maps and assay data; also a report of laboratory ore testing which indicates the economic feasibility of upgrading the low grade Coso lake bed ores for acid leaching and uranium oxide recovery. Appended hereto is a map showing the grid pattern and location of drill holes.

Colorado Exploration Company contracted to do the exploratory drilling and to provide the necessary geologic supervision. Below is a summary of the ore reserves found. The reserves shown in Column "A" are from the engineering report of the contractor and are based on three interpretations of the results obtained by drilling 5452 linear feet in 31 holes. The holes were rotary air-drilled in the Coso (lake bed) Formation and are spaced approximately 200 feet apart. A flat dipping ore

body approximately 20 feet thick in the unconsolidated sandstones was thus delimited on three sides with the fourth side open to the west. Five additional holes, BE-204 to 208, inclusive, totaling 1082 feet were then drilled extending the grid pattern westerly. The estimates of ore tonnage and grade indicated by this additional drilling is noted in Column "B".

Reserve Ore Tonnage and Grade

Alternate Estimates	Col. A	Col. B	Total (Col. A & B)
1. Based on as much low-grade material as could be included to realize a maximum tonnage averaging in excess of .05% U_3O_8	451,707 .061% U_3O_8	31,618 .05% U_3O_8	483,325 .061% U_3O_8
2. Based on a natural cut-off of the mineralized zone	318,231 .073% U_3O_8	31,618 .06% U_3O_8	349,849 .072% U_3O_8
3. Based on a cut-off ore grade of 0.10% U_3O_8	78,927 .128% U_3O_8	-	78,927 .128% U_3O_8

From the standpoint of operating economy and mining control, only Estimate No. 2 is valid. It comprises probable ore based on drill holes spaced 200 feet apart. Additional drilling on closer spacing would be required to prove the ore body. However, the size, character and geologic structure of the deposit are such that closer-spaced drilling can reasonably be expected to confirm the ore estimate, and at this stage it is more important to explore for additional ore.

Mining dilution (estimated 15% by weight) by adjacent off-grade material above and below the ore body will increase the reserve ore in No. 2 Estimate to 402,000 tons with a corresponding decrease in grade to .065% U_3O_8.

The possibility of developing additional substantial reserves of lake bed ore has not been exhausted either in the Coso property or in the similar lake bed formation which extends for several miles to the north and south of the Coso property. It is noteworthy that BE-206 to the northwest of the known ore body intersected 22 feet of .073% U_3O_8 ore. A recent radiometric survey and iso-rad map of the lake bed area not yet drilled on the Coso property show two anomalies, one each to the northwest and southwest of the known ore body. A print of the iso-rad map has been submitted to AEC. These anomalous areas are well worth drilling.

No unusual circumstances attended the work of this project. Operating conditions were favorable and the progress of the work on the whole was satisfactory. Sample cuts of each 3 foot interval of all drill holes are stored under lock in Olancha. There was no ore production during the project. Plans for future operations are indefinite at this time.

Emmet R. Cullity

Emmet R. Cullity, for
COSO URANIUM, INC.

July 24, 1957

EMC:bj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

1605 Evans Avenue
Reno, Nevada

June 10, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California
Contract Idm-E994

Reference is made to your letter of May 13, 1957, relative to subject contract.

Enclosed are the Government's, Division, and Audit copies of Amendment No. 4, which have been executed by the Operator. The remaining copies have been distributed in the usual manner.

S. Ricker

Attachments

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 12 1957

DATE	INITIALS	CODE
6/12	C	220
6/12	B	215
"	FMM	700

OFFICIAL FILE COPY DMEA RECEIVED MAY 23 1957		
DATE	INITIALS	CODE
5/23	2002	220
5/24	[illegible]	800
5/24	[illegible]	700

1605 Evans Avenue
Reno, Nevada

May 21, 1957

Mr. W. O. Merritt, President
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al. groups
Inyo County, California
Contract No. Idm-E 994

Dear Mr. Merritt:

Enclosed are the original and five copies of proposed Amendment No. 4 to referenced contract, signed by the Administrator for the Government. This will approve the additional drilling proposed by Mr. Emmet R. Cullity in his letter dated April 2, 1957 and discussed with him and Mr. Post at our office on April 5, 1957. It will also permit payment of the additional drilling as allowed in the amendment.

If the terms and conditions of the proposed amendment are satisfactory to you, all six copies should be signed by your firm. The copy marked "Operator's copy" should be retained by you and the original and other four copies should be returned to this office.

If any part of this amendment does not meet with your approval, the original and all copies should be returned to this office with your suggested changes.

Very truly yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

Encls.

SRicker:ft
cc: Opr. Com., DMEA, Wash., D.C.
Finance Office, Region II
GeoMavor
RMSmith
File
Chron

EA Form 7
2-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/13	Murphy	700
5/13	Ellis	700
5/13	Lodge	800
5/13	Selfridge	130
5/13	Johnson	110
"	Rutledge	100
5/14	C	220

700

MAY 13 1957

B

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-8994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Ricker:

In accordance with our teletype of April 15, and the data in your memorandum of April 26, 1957, enclosed are the original and five copies of the proposed Amendment No. 4 signed by the Administrator. Also enclosed for Field Team use are two extra copies of the amendment without the map "Exhibit 'M' Revised."

If you and the Operator find the proposed amendment in order, have an authorized representative of the corporation sign the original and all copies. Thereafter, kindly distribute the copies in the usual manner.

Sincerely yours,

George C. Selfridge
(By esf)

Chairman, Operating Committee

Enclosures

APPROVED:

Frank D. Lamb
(By esf)
Member, Bureau of Mines

Thor H. Kiilsgaard
(By esf)
Member, Geological Survey

FMMurphy/izm 5-13-57
cc to: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

DRAFT
FMMurphy/izm
56-57

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMEA-4191
CONTRACT NO. IDM-E994

AMENDMENT NO. 4

It is agreed this _____ day of _____, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Coso Uranium, Inc., that Exploration Project Contract Idm-E994, Docket No. DMEA-4191, dated August 21, 1956, as amended, is further amended effective January 2, 1957 as follows:

1. That Amendment No. 3 be revoked in its entirety.
2. Stage II and Stage III of original contract be deleted.
3. In Amendment No. 2, under Exhibit "A," delete pages 2 and 3 and substitute the following:

   (a) In Article 13 of the Contract, add the following:

   (f) All bulldozer work under the Contract shall be performed with a D-7 Caterpillar tractor or equivalent unit of any other make.

   (b) Delete all paragraphs under Stage I, page 2 and substitute, as follows:

   Stage I shall consist of drilling not in excess of 36 holes, totaling not in excess of 5,200 feet of rotary drilling. The holes shall be drilled at the approximate locations shown on the map entitled "Exhibit 'M' Revised, Plan of Exploratory Drilling, ---" attached hereto and made part hereof.

(c) Not in excess of 402 samples shall be chemically analyzed for their U_3O_8 content under this Stage of the Contract.

Estimated Costs of Project

Actual Costs

Category (1) Independent Contracts

Rotary drilling, 5,200 feet at $2.00/ft. $10,400.00

(Average cost per foot including full-time services of geologist supervisor)

Category (2) Personal Services:

Included in cost under Category (1)

Category (3) None

Category (4) Operating Equipment:

Subcategory (a) Dozer rental:

preparation of drill sites -

63 hours at $16.00/hr. 1,008.00

Categories (5) and (6) None

Category (7) Miscellaneous:

Chemical analyses for U_3O_8 content of

402 samples at $3.50/sample 1,407.00

Estimated Total Cost Stage I $12,815.00

Change Summary Estimated Total Costs, page 5, to read as follows:

S U M M A R Y

Estimated Total Cost of Project $12,815.00

Government Participation @ 75% (rounded) $9,612.00

In Article 5 of the Contract the figures $30,725.00 and $23,044.00 are deleted and replaced by the figures $12,815.00 and $9,612.00, respectively.

This Amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By_____

COSO URANIUM, INC.

By_____

Title_____

Form [illegible] (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.5

JUL 24 1957

OPERATOR'S MONTHLY REPORT AND VOUCHER

Stage I - Amended Final

Month of April, 1956 7 Docket No. DMEA 4191 Contract No. Idm E994

Operator's Name Coso Uranium, Inc. Minerals Uranium

Address 2485 American Ave., Long Beach 6, California

Contract Amount, $ 12,815.00 Government Participation: 75 % Amount, $ 9,612.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Rotary	$2000.00	$8396.01	$10396.01			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental Dozer		1008.00	1008.00			
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis		1407.00	1407.00			
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	$2000.00	$10811.01	$12811.01			

I certify that the above bill is correct and just and that payment therefor has not been received. - except as noted under "Remarks" on form MF-104A

Date 6/13/57 *Payee Coso Uranium, Inc.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 1500.00

Lloyd W. Sjolander
Authorized Certifying Officer

Signature
(Authorized Certifying Officer)

Date 9/3/57 Vou. No. 5F-DMEA-4

(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E994 in accordance with the terms of the contract.

Signature B. H. Sheahan Title Mining Engineer Date 7/10/57

B. H. Sheahan

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature S. Ricker Title Executive Officer Date 7/10/57

S. Ricker

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form [illegible]-104A
([illegible]952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Stage I - Amended Final

Month of April 1956 Docket No. DMEA 4191 Contract No. Idm E994

Operator's Name Coso Uranium, Inc. Minerals Uranium

Address 2485 American Avenue, Long Beach 6, California

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: ~~Core~~ Rotary	Foot	$2000.00	1000	$10,396.01	5200	2.00	5200	$2.00
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and ~~Trails~~ DH Sites	Hour			1,008.00	64	16.00	64	16.00
Sample Analysis	Each			1,407.00	402	3.50	402	3.50
TOTAL DISTRIBUTED COSTS		$2000.00		$12,811.01				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								12,815.00

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief. - except as noted under "Remarks".

Date 6/13/57 Operator Coso Uranium, Inc.

Per [signature] Title President

REMARKS: Stage I completed.
Actual Units & Costs of:

Drilling: 5633 ft.	$11,191.80
Assaying: 640 samples	2,644.14
Dozer Rental: 126.7 hrs	1,814.22
Actual Total Cost	$15,650.16

→ NOTE.—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.

(Instructions on reverse)

(For Government use only) [signature], Mining Engineer

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

CHapel 2-4589

CERTIFICATE OF ANALYSIS

Date 4-25-57

Order No. 8902-S

.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Material: Ore Samples 27
Received: 4-24-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8902-1	205	75-78		0.04		
8902-2	205	78-81		0.05		
8902-3	205	81-84		0.05		
8902-4	205	84-87		0.04		
8902-5	205	189-192		0.06		
8902-6	205	192-195		0.04		
8902-7	205	195-198		0.03		
8902-8	205	177-180		0.03		
8902-9	205	180-183		0.03		
8902-10	205	183-186		0.04		
8902-11	205	186-189		0.04		
8902-12	206	165-180		0.014		
8902-13	206	180-195		0.013		
8902-14	206	195-198		0.016		
8902-15	206	198-201		0.014		
8902-16	206	201-204		0.014		
8902-17	207	141-144		0.03		
8902-18	207	144-147		0.03		
8902-19	207	147-150		0.04		
8902-20	207	150-153		0.04		
8902-21	207	153-156		0.03		
8902-22	207	156-159		0.04		
8902-23	207	159-162		0.03		
8902-24	207	162-165		0.03		
8902-25	207	165-168		0.03		
8902-26	207	168-171		0.03		
8902-27	207	171-174		0.03		

W. D. Brown
Analyst.

THE BROWN LABORATORY

2263 Broadway
GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W. O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach, California

Date 5-10-57
Order No. 8999-S

Material: Ore Samples - 5
Received: 5-9-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8999-1	206	210-218		0.09		
8999-2	206	218-225		0.08		
8999-3	206	225-228		0.04		
8999-4	206	228-231		0.05		
8999-5	206	231-232		0.06		

Analyst.

June 13, 195[illegible]

Mr. [illegible], Executive Officer
AMEA Field Depot, Region [illegible]
[illegible] Ernie Pyle
Reno, Nevada

re: Project No. [illegible]
Cone Uranium, Inc.
Contract No. [illegible]

Dear Mr. [illegible]:

Enclosed are the [illegible] data and description of work performed in the completion of the [illegible] as requested:

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible] Lorent Hensley

*Note: Please [illegible] with [illegible] after they arrive [illegible].

The [illegible] by Colorado Exploration Company for drill holes [illegible] at the reduced rate of $[illegible] per foot because they had no supervising geologist at Cone during this drilling. It serve as supervising geologist Lorent Hensley was employed by Cone Uranium, Inc., at salary of $[illegible] per month plus expenses and his services are included in the unit cost of $[illegible] per foot as noted in the drilling.

The enclosed lateral map shows anomalous areas northwest and southwest of the known ore body. Also of interest is the northwest is the ore intersection in DH 20b, 22 feet of 0.[illegible]% U_3O_8. It seems to me that further drilling is justified, especially to the northwest, and it's too bad AMEA will not go along with us in the west.

It has been a pleasant experience working with you and with Mr. Sheehan, Mr. Smith and Mr. Tatlock, and I do appreciate the fine cooperation that all of you have given in this exploration project.

Yours very truly,

Emmet R. Collity, for
Cone Joint Venture

ERC:bj

DMEA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1605 Evans Avenue
Reno, Nevada

April 26, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al. Groups
Inyo County, California
Contract No. Idm-E 994

Reference is made to your telegram of April 15, 1957 relative to amendment to subject contract.

Enclosed are two copies of our suggestions along with eight copies of Exhibit "M" revised. This Amendment was drawn up to incorporate the changes included in Amendment No. 3.

S. Ricker

Encls.

OFFICIAL FILE COPY
DMEA
RECEIVED APR 30 1957

DATE	INITIALS	CODE
4/30	C	220
	~~Murphy~~	~~700~~

BUREAU OF MINES
WASHINGTON, D. C.

APR 29 3 18 PM '57

OFFICIAL FILE COPY
DMEA
RECEIVED APR 30 1957

DATE	INITIALS	CODE

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INC.
DOCKET NO. DMEA-4191

AMENDMENT NO. 4

It is agreed this 26th day of April, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Coso Uranium, Inc., that Exploration Project Contract Idm-S 994, Docket No. DMEA-4191, dated August 21, 1956, as amended, is further amended, as follows:

1. That Amendment No. 3 be revoked in its entirety.

2. Stage II and Stage III of original contract ~~be~~ are deleted.

3. In Amendment No. 2, under Exhibit "A", delete pages 2 and 3 and substitute the following:

(a) In Article 13 of the Contract, add the following:

"(f) All bulldozer work under the Contract shall be performed with a D-7 Caterpillar tractor or equivalent unit."

(b) Delete all paragraphs under Stage I, page 2 and substitute, as follows: 7,350 or 36 4400 - 31 holes

"Stage I shall consist of drilling not in excess of 5,200 feet or 33 holes, 4,200 feet of which have been completed. The additional 1,000 feet shall be used for delinating the indicative ore zone to the west of the drilled area as approximately shown on Exhibit "M" revised, attached hereto and made a part of the Contract.

(c) Not in excess of 402 samples shall be chemically analyzed for their U_3O_8 content under this Stage of the Contract.

Estimated Costs of Project

Actual Costs

Stage I:

Category (1) Independent Contracts

Rotary drilling, 5,200 feet at $2.00/ft. $10,400.00
(Average cost per foot including full-time services of geologist supervisor)

Category (2) Personal Services:

Included in cost under Category (1)

Category (3) None

Category (4) Operating Equipment:

Subcategory (a) Dozer rental: preparation of drill sites - 63 hours at $16.00/hr. $ 1,008.00

Categories (5) and (6) None

Category (7) Miscellaneous:

Chemical analyses for U_3O_8 content of 402 samples at $3.50/sample 1,407.00

Estimated Total Cost-Stage I $12,915.00

Change Summary Estimated Total Costs, page 5, to read as follows:

S U M M A R Y

Estimated Total Cost - Stage I	$12,815.00	
Balance Unallotted	17,910.00	
Estimated Total Cost of Project		$30,725.00
Government Participation at 75% (rounded)		$23,044.00

This Amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By_____

COSO URANIUM, INC.

By_____

Title_____

DMEA
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/15	Murphy	700
"	Ellis	700
4/15	Selfridge	130
4/"	Johnson	110
"	Mattaidey	100
4/16	C	220
		700

APR 15 1957

Kilsgaard
Lamb

Department of the Interior

DMEA

14X1401(01) Revolving Fund,
Defense Production Act, Interior (Transfer
to Office of Secretary)

T E L E T Y P E

SPANGLER RICKER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION II
1605 EVANS AVENUE
RENO, NEVADA

REFERENCE APRIL 8, DMEA-4191, CONTRACT IDM-E994, COSO URANIUM, INC. WILL PREPARE AMENDMENT ALLOWING ADDITIONAL FOUR HOLES. IT IS DOUBTFUL THAT FURTHER EXPLORATION WILL BE APPROVED TO DELIMIT THE KNOWN LOW GRADE URANIUM DEPOSIT. HOWEVER, CONSIDERATION MIGHT BE GIVEN TO EXPLORING NEW AREAS FOR POTENTIAL HIGHER GRADE DEPOSITS. PLEASE FORWARD YOUR RECOMMENDATIONS AND DATA TO PREPARE AMENDMENT.

George C. Selfridge
CHAIRMAN, OPERATING COMMITTEE (WS)

FMMurphy/gla
4-15-57
cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr.Murphy
THKiilsgaard, Rm. 5224
Confirmation to Region II Field Team

8623

DMEA FORM 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/12	Murphy	700
"	Ellis	700
		130
		110
		100
		220
		700

(Uranium)

Department of the Interior

DMEA

11X4401(01) Revolving Fund,
Defense Production Act, Interior (Transfer
to Office of Secretary

TELETYPE

SPANGLER RICKER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION II
1605 EVANS AVENUE
RENO, NEVADA

REURTELTO APRIL 8, DMEA-4191, CONTRACT IDM-E994, COSO URANIUM, INC. WILL PREPARE AMENDMENT ALLOWING ADDITIONAL DRILLING. LETTER OUTLINING ADDITIONAL DATA REQUIRED FOR PROPOSED AMENDMENT WILL BE FORWARDED SHORTLY.

CHAIRMAN, OPERATING COMMITTEE

FMMurphy/gla
4-12-57
cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr. Murphy
THKiilsgaard, Rm. 5224
Confirmation to Region II Field Team

8623

Mr. Murp -

Suggest amendment at this time only to convert Stage II description and funds to drilling, or if you have sufficient data prepare an amendment deleting all of Exhibit A and substitute a new Exhibit A covering all changes.

FEJohnson

Original of Ricker's memo placed in the docket file.

gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

1605 Evans Avenue
Reno, Nevada

OFFICIAL FILE COPY
DMEA
RECEIVED APR 10 1957

DATE	INITIALS	CODE
4/10	C	220
"	Murphy	700
4-11		225

AIR MAIL

April 8, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan et al Groups
Inyo County, California
Contract No. Idm-E994

Based on preliminary analysis of work done todate on subject property, the tentative estimate of tonnages disclosed is as follows:

78,000 tons of .128 percent U_3O_8, or
318,000 tons of .073 percent U_3O_8, or
450,000 tons of .061 percent U_3O_8

This ore body remains open toward the west. Operator requests permission to drill four more holes in that direction and any additional holes that may be required to delimit this ore body. This would be financed from Stage II funds. See our interim report map March 21.

Operator also requests that remaining funds in contract be held in reserve in case any wild cat drilling on their own account would justify further Government participation in adjacent areas.

All above work to be dependent on approval of our engineers and geologists.

11

Permission to proceed immediately on the first four holes is requested in order to retain services of contractor engaged in drilling.

Roscoe Smith and I with our geologist and engineer discussed matters with Operator in Reno April 5th, and we believe continued operations along plans outlined are justified.

Although low grade, this ore body is of greater potential value than anything discovered in our Region and we believe further exploration is justified.

Would appreciate your reaction by telegram, particularly regarding the holes for extension to west of proven ore body.

S. Ricker

S. Ricker

ACTION ON INTERIM
OR FINAL FIELD TEAM REPORT
Date 4-2

Referred to:

1. ~~Mr. Mittendorf~~
2. ~~Mr. Johnson~~
3. ~~Mr. Chambers~~
4. Docket Control Mails and Files
5. ~~Division~~
6. Docket Control Mails and Files
7. 700

Note comments in report regarding:

1.

2.

3.

4.

and take appropriate action.

- - - - - - - - - - -

Action taken by Division: None. Holding in abeyance pending advise from Field Team regarding possible work proposed in Stages II & III

Robert E. Adams

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Office of
Executive Officer
DMEA Field Team
Region II

1605 Evans Avenue
Reno, Nevada

Date March 28, 1957

Memorandum

To: Operating Committee, DMEA, Interior Bldg., Wash., D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Interim Inspection Report

Attached are four copies of Interim Report on

Docket No. DMEA-4191

Contract No. Idm-E 994

Commodity Uranium

Operator Coso Uranium, Inc.

Property White Swan, et al group of claims

By Benjamin H. Sheahan, USBM
D.B. Tatlock, USGS
Dated 3/21/57

OFFICIAL FILE COPY
DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE
4/2	C	220
4-4	[illegible]	100
	[illegible]	[illegible]

S. Ricker
Executive Officer
DMEA Field Team, Region II

Attachments

Copy to: R. M. Smith, USGS (w/copy of report)
Finance Officer, Region II (w/copy of report)
File

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Mineral Deposits Branch
4 HOMEWOOD PLACE
MENLO PARK, CALIFORNIA

OFFICIAL FILE COPY
DMEA
RECEIVED APR 1 1957
DATE | INITIALS | CODE

March 21, 1957

INTERIM REPORT

To: DMEA Field Team, Region II

From: B. H. Sheahan, U. S. Bureau of Mines and
D. B. Tatlock, U. S. Geological Survey

Subject: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups of claims
Inyo County, California
Contract Idm-E994

An interim inspection of the property was made March 13, 1957 by B. H. Sheahan, U. S. Bureau of Mines, and D. B. Tatlock, U. S. Geological Survey, accompanied by John A. Holmquist, geologist supervisor, Colorado Exploration Company, representing the operator.

Work completed consisted of 31 dry rotary drill holes totaling 4,400 feet; the holes range in depth from 29 feet to 290 feet. All of the holes penetrated through the Coso lake beds and bottomed in granite except holes 8, 28, and 203. Holes 8 and 28 were abandoned owing to operational difficulties and were redrilled near the original sites as 8A and 28A. The abandoned footage was not charged against the DMEA contract. Hole 203 was

at a depth of 60 feet at the time of the inspection and had not yet penetrated the lake beds. This hole will complete the drilling under Stage I.

Hole sites 13, 15, and 22, on the thin eastern margin of the lake beds, will not be drilled. The operator requested on February 18, 1957 that he be allowed to relocate these holes as holes 200, 201, and 202, and that two additional holes, 41 and 42, be authorized. Hole 203 is being drilled in order to determine the extent of the mineralized ground west of hole 200 which cut 15 feet of lake beds averaging 0.067 percent U_3O_8.

Results of the drilling to date indicate a mineralized zone 800 feet long trending N 15° W; it is 150 to 500 feet wide and averages about 20 feet in thickness. The zone is overlain by 50 to 75 feet of overburden. Using a tonnage-volume factor of 16, the zone would contain 300,000 tons of lake bed material averaging 0.07 percent U_3O_8.

None of the holes encountered mineralized rock at the granite-lake beds contact.

It is recommended that no further work be authorized under the contract unless hole 203 indicates that material of substantially higher grade surrounds the volcanic vent west of the established mineralized zone.

Summary of Work Completed

Hole No.	Collar Elev.	Depth	Sample Data Interval	Feet	%c U_3O_8	Remarks
7A	4612.6	180.0	84-117	33	0.072	Average of interval.
0A	4567.7	29.0				Low count.
1	4625.6	69.0				Low count.
2	4676.0	67.0				Low count.
3	4725.6	45.0				Low count.
8	4651.9	127.0	57-96	39	0.077	Average of interval.
9	4674.3	142.5	75-90	15	0.12	Average of interval.
			72-93	21	0.094	Average of interval.
10	4712.6	153.0	----	---	----	No assays above 0.04.
11	4724.9	64.0				Low count.
12A	4739.4	54.0				Low count.
16	4891.8	79.0				Low count.
17	4829.3	100.5				Low count and all assays less than 0.02.
18	4786.2	199.0				Low count.
19	4729.8	264.0	144-147	3	0.040	Most assay less than 0.02.
20	4681.6	258.0	75-105	30	0.073	Average of interval.
23	4817.8	85.0				Assays less than 0.02.
24	4793.5	95.0				Assays less than 0.02.
25	4755.4	213.0				Assays less than 0.02.
26	4724.5	290.0	138-144	6	0.05	Average of interval.
			153-174	19	0.04	Average of interval.
			234-252	18	0.07	Average of interval.
27A	4639.2	191.0	72-76	4	0.04	Average of interval.
28	4609.9	120.0				Low count - lost bit.
29	4680.5	171.0				Low count and all assays less than 0.02.
30	4724.5	200.0	105-111	6	0.04	Average of interval.
31A	4745.1	131.0				Assays less than 0.02.
32A	4780.6	54.0				Assays less than 0.02.
8A	4651.9	163.0	57-69	12	0.14	Average of interval.
8A	4651.9	163.0	54-87	33	0.082	Average of interval.
28A	4609.9	277.0	-----	---	-----	No assays - low count.
41A	4530.0	63.0	-----	---	-----	No assays - low count.
42A	4575.1	202.0	81-87	6	0.05	Average of interval.
			72-90	18	0.041	Average of interval.
200	4596.9	159.0	54-60	6	0.11	Average of interval.
			48-63	15	0.067	Average of interval.
201	4587.3	165.0	78-81	3	0.06	Average of interval.

Hole No.	Collar Elev.	Depth	Sample Data Interval	Feet	%c U_3O_8	Remarks
202	4576.2	177	108-111	3	0.06	Average of interval.
			120-123	3	0.06	Average of interval.
203	---	60	----	--	----	Low count - Overburden.

Total Drilled: 4,647 feet

Less holes
8 and 28: 247 feet

Total DMEA: 4,400 feet

The work has been done efficiently, and holes are now completed at the sites which had the best exploration potential. Drilling operations were temporarily halted from February 8 to 18 while arrangements were made to rent a bulldozer. Operations were again temporarily halted February 23, 1957 while the company was conducting wildcat drilling at Cactus Flat. Work was resumed in the contract area at hole 203 on March 13, 1957. Mr. Holmquist is considering other employment and plans to leave the independent contractor in the near future.

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
3-7	Murphy	700
3-7	Ellis	700
3-8	Chambers	800
3/8	Selfridge	130
"	Johnson	110
"	Mitchell	100
	Bishop	220
	Kiilsgaard	225

MAR - 8 1957

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-3994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Ricker:

A review of the subject Operator's Monthly Report and Voucher for January 1957 indicates that the Operator is having more samples chemically analyzed than is necessary.

The Certificates of Analysis by the Brown Laboratory show that the uranium in the deposit is in equilibrium. Therefore it appears that radioactive checks on the drill cuttings in the field could have eliminated a large portion of the samples which were assayed. In our opinion 428 sample analyses on cuttings from 25 holes is excessive, especially when the contract states that only material showing significant uranium mineralization should be chemically analyzed.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

APPROVED:

O. M. Bishop

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

FMMurphy/izm 3-7-57
cc to: Mr. Murphy
Code 700
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
JKratchman, AEC

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Office of
Executive Officer
DMEA Field Team
Region II

1605 Evans Avenue
Reno, Nevada

Date Febr. 21, 1957

Memorandum

To: Operating Committee, DMEA, Interior Bldg., Wash., D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Interim Inspection Report

Attached are four copies of Interim Report on

Docket No. DMEA-4191

Contract No. Idm-E 994

Commodity Uranium

Operator Coso Uranium, Inc.

Property White Swan, et al Groups

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 25 1957

DATE	INITIALS	CODE
2/27	C	220

By B. H. Sheahan

Dated February 19, 1957

S. Ricker
Executive Officer
DMEA Field Team, Region II

Attachments

Copy to: R. M. Smith, USGS (w/copy of report)
Finance Officer, Region II (w/copy of report)
File

INTERIM REPORT

Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California
Contract No. Idm-E994

February 19, 1957

Exploration work was inspected February 12-14, 1957 by B. H. Sheahan, mining engineer, U. S. Bureau of Mines accompanied by John A. Holmquist, geologist supervisor. Mr. Emmet R. Cullity, consulting engineer for the operator and his associates, accompanied the inspection team on February 12.

Dry rotary drilling operations were started early in January 1957 and 25 holes averaging 135 feet in depth are completed. Total footage drilled amounts to 3,381 feet. The crew consisted of four men: a geologist supervisor, a sampler, and two drillers. Samples were taken at three foot intervals, were checked for radioactivity, and are stored by the operator at Olancha, California. Chemical and radiometric determinations are being made by the Brown Labratory, 2263 Broadway, Grand Junction, Colorado. Results will be included with the Operator's monthly rep

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 25 1957

DATE	INITIALS	CODE

All of the holes penetrated through the Coso lake beds and into a few feet of granite except holes 8 and 28 where operational difficulties were encountered. Practically no uranium mineralization was found on the unconformity between the lake beds and the granite.

Holes 7A, 8, 20, and 26 intersected about 30 feet of uranium bearing lake beds that averaged 0.073% U_3O_8 by chemical determination of samples. A few three foot intervals showed slightly more than 0.20% U_3O_8. Holes 9 and 10 are expected to show similar mineralization (see fig. 1).

Hole locations 13, 15, and 22 near the east perimeter of the deposit fall upon a thin marginal fringe of lake beds and colluvium. Both access and drilling would be very difficult with present equipment. Holes 1, 2, 3, 11, 12A, 16, 17, 18, 19, 23, 24, 25, 29, 30, 31A and 32A are evidently barren. Holes 13, 15 and 22 should not be drilled because they have but little exploratory value.

Three drill hole sites (41, 42, and 202) northerly and westerly from hole 7A appear to have fair exploratory possibilities. Tentative hole locations 200, 201, 202, and 203 fall upon volcanics and volcanic alluvium and are relatively poor sites unless the volcanics at these locations cover lake beds.

Drilling was temporarily halted February 8th while arrangements were being made to rent a bulldozer. Exploration was expected to be resumed February 18, 1957. Drill hole logs, hole probe records and monthly reports are being compiled by the supervisor and the operator's consulting engineer. The operator has had more sample determinations run chemically than were necessary.

The company is planning to do some wild cat rotary drilling in the Cactus Flat area to the east of the property.

C onclusions and recommendations:

The deposit has been thoroughly and efficiently explored by the work completed to date. Footage of drilling authorized under Stage I that is not yet completed amounts to 819 feet. Holes sites 41, 42, and 202, and possibly three additional hole sites 200, 201, and 203 have some exploratory value. Further drilling under Stage I is warranted.

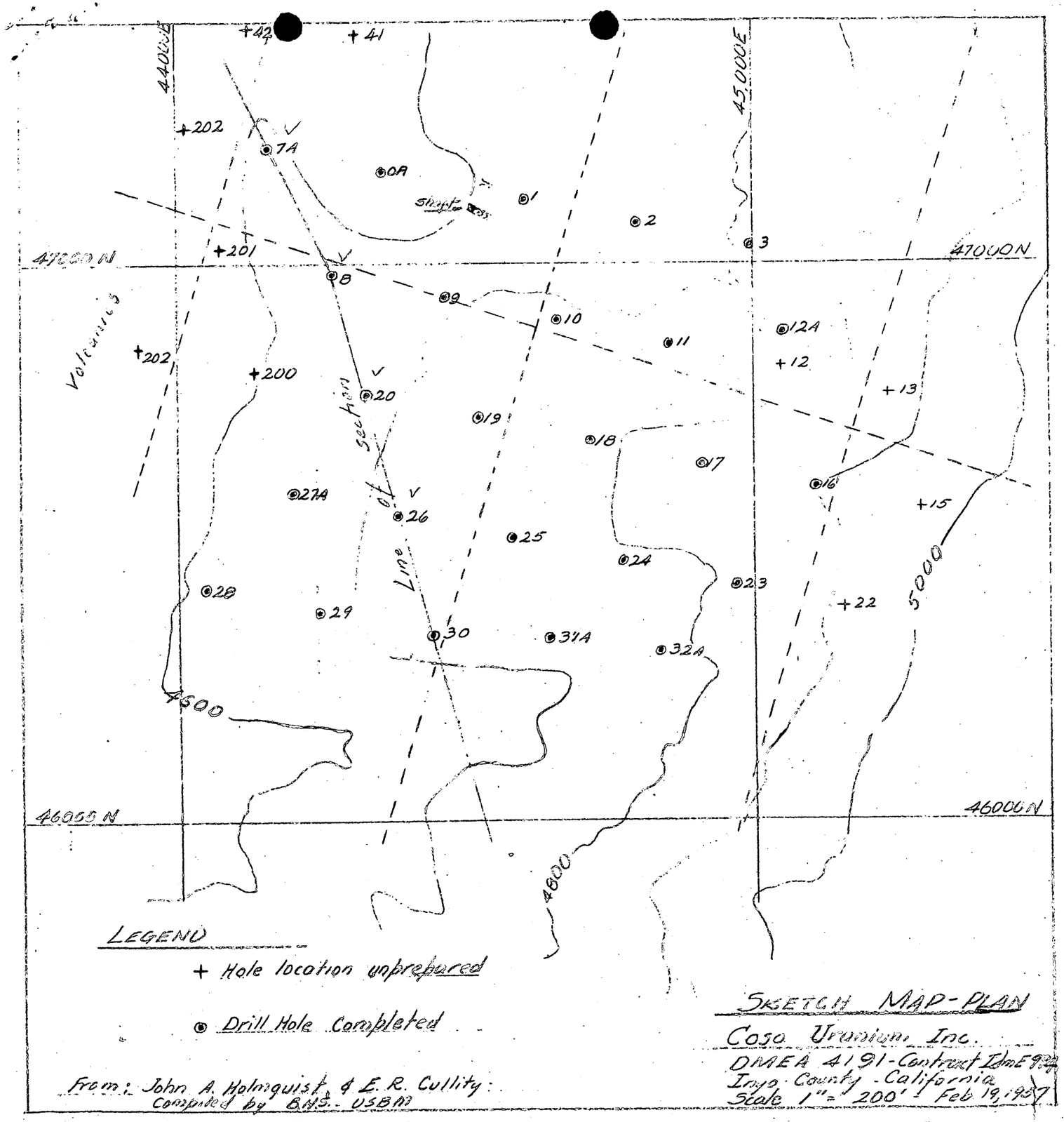
Exploration completed may indicate about 300,000 tons of lake beds averaging 0.07% U_3O_8. Nothing has been found along the unconformity between the lake beds and granite.

Summary of Work Completed

Hole Number	Collar elevation	Depth, feet	Sample Data Interval	Feet	%cU$_3$O$_8$	Remarks
7A	4612.6	180.0	84-117	33	0.072	Average of interval.
0A	4567.7	29.0				Low count
1	4625.6	69.0				" "
2	4676.0	67.0				" "
3	4725.6	45.0				" "
8	4651.9	127.0	57-96	39	0.077	Average of interval.
9	4674.3	142.5				Count similar to hole 8
10	4712.6	153.0				" " " " "
11	4724.9	64.0				Low count
12A	4739.4	54.0				" "
16	4891.8	79.0				" "
17	4829.3	100.5				Low count and all assays less than 0.02%.
18	4786.2	199.0				Low count
19	4729.8	264.0	144-147	3	0.040	Most assay less than 0.02%.
20	4681.6	258.0	75-105	30	0.073	Average of interval.
23	4817.8	85.0				Assays less than 0.02%
24	4793.5	95.0				" " " "
25	4755.4	213.0				" " " "
26	4724.5	290.0	138-144	6	0.05	Average of interval.
			153-174	19	0.04	" " "
			234-252	18	0.07	" " "
27A	4639.2	191.0	72-76	4	0.04	" " "
28	4609.9	120.0				Low count - lost bit.
29	4680.5	171.0				Low count and all assays less than 0.02%
30	4724.5	200.0	105-111	6	0.04	Average of interval.
31A	4745.1	131.0				Assays less than 0.02%
32A	4780.6	54.0				" " " "

B. H. Sheahan

B. H. Sheahan
Mining Engineer


44000E
45000E
47000N
46000N
Volcanics
Section Line
Shaft
4600
4800
5000
LEGEND
+ Hole location unprepared
Drill Hole Completed
From: John A. Holmquist & E. R. Cullity:
Compiled by B.H.S. - USBM
SKETCH MAP-PLAN
Coso Uranium Inc.
DMEA 4191-Contract IdmE 9
Inyo County - California
Scale 1" = 200' Feb 19, 1957

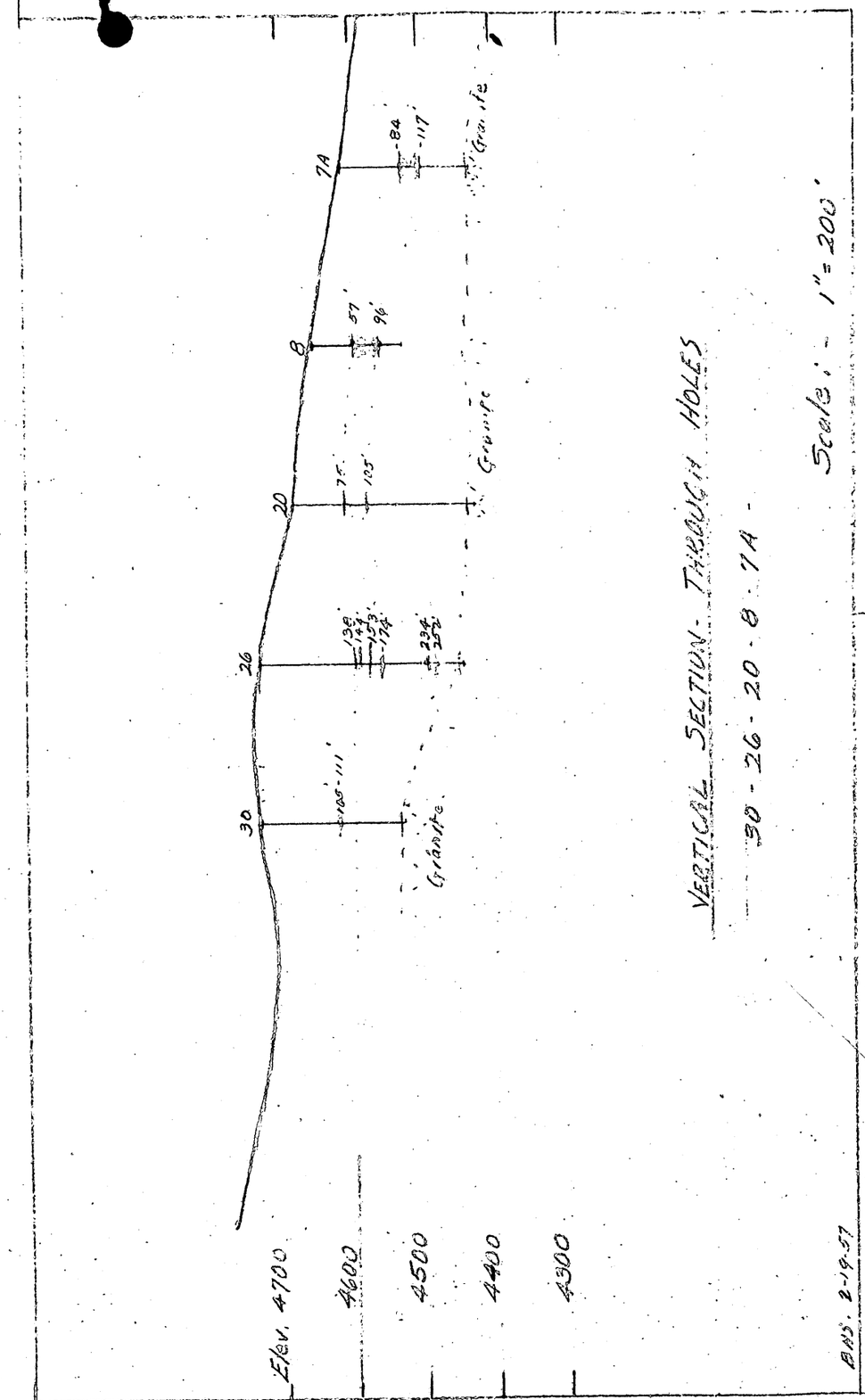

VERTICAL SECTION - THROUGH HOLES
30 - 26 - 20 - 8 - 7A -
Scale: - 1" = 200'
Elev. 4700
4600
4500
4400
4300
Granite
BHS. 2-19-57

Figure 1

RECEIVED
FEB 25 1957
D.M.E.A.

DMEA

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

1605 Evans Avenue
Reno, Nevada

February 11, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Contract No. Idm-E994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Reference is made to your letter of January 28, 1957 in which was enclosed the original and five copies of Amendment No. 3 to subject contract.

The amendment has been executed by the Operator and the original and two copies are attached. Proper disposition has been made of the remaining copies.

S. Ricker

Encl.

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 13 1957

DATE	INITIALS	CODE

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 4 1957

DATE	INITIALS	CODE
2-4	C	226
2-4	[illegible]	800
2-5	[illegible]	225

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

1605 Evans Avenue
Reno, Nevada

February 1, 1957

Mr. W. O. Merritt, President
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan et al groups
Inyo County, California
Contract No. Idm-E994

Dear Mr. Merritt:

Enclosed are the original and five copies of an amendment No. 3 to referenced contract signed by the Administrator.

This amendment is required because the small changes in the Estimated Total Cost of the Project and Government Participation items were not provided for in Amendment No. 2. This difference was accounted for by adding two more sample analyses under the description of work. Our Washington office also brought our attention to the fact that on Amendment No. 2 which was drawn up in this office that the Government can only pay for bulldozing if the work is done by the Operator on a time rental basis for the equipment.

Will you please sign all copies at your earliest convenience and return all except the Operator's copy to this office.

Very truly yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

Encl.

SRicker:gh
cc: Opr. Com., DMEA, Wash., D. C.
Finance Off., Reg. II
Geo. Mavor
R. M. Smith
File

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Office of
Executive Officer
DMEA Field Team
Region II

1605 Evans Avenue
Reno, Nevada

Date 1/31/57

RECEIVED FEB 4 1957 D.M.E.A.

Memorandum

To: Operating Committee, ~~DMEA~~, Interior Bldg., Wash., D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Interim Inspection Report

Attached are four copies of Interim Report on

Docket No. DMEA-4191

Contract No. Idm-E994

Commodity Uranium

Operator Coso Uranium, Inc.

Property White Swan et al groups
Inyo County, Calif.

By Donald B. Tatlock, USGS

Dated January 28, 1957

S. Richer
Executive Officer
DMEA Field Team, Region II

Attachments

Copy to: R. M. Smith, USGS (w/copy of report)
Finance Officer, Region II (w/copy of report)
File

Mineral Deposits Branch

RECEIVED
D.M.E.A.
1957

January 28, 1957

INTERIM REPORT

To: DMEA Field Team, Region II

From: Donald B. Tatlock, geologist
U. S. Geological Survey

Subject: DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al. groups
Inyo County, California
Contract Idm-E994

An interim inspection of the property was made January 16, 1957 by D. B. Tatlock, accompanied by John A. Holmquist, geologist, Colorado Exploration Company, and Conrad Housley, resident geologist.

Work completed consisted of 642 feet of dry rotary drilling in three holes (19, 20, and 7a), about 18 percent of the footage allowed under Stage I. Hole 19 was completed at 264 feet; it intersected the granite basement at about 260 feet. Hole 20 was drilled to 258 feet; it intersected the granite at about 255 feet. Hole 7a was at a depth of about 120 feet at the time of the inspection; it was collared about 80 feet west of the originally proposed hole 7 location in order to facilitate access and to attain a thicker section.

Holes 19 and 20 were drilled dry (4-1/4 inch bit) without difficulty. No casing was necessary.

In sampling, the cuttings are collected from the Duclone type separator at three-foot intervals. The coarse and fine fractions are withdrawn into a single container and split. One half is resplit; one quarter is saved for chemical assay and three-quarters are used for logging and then stored. Recovery from holes 19 and 20 was estimated to be 90 percent. Very fine material (clay size particles) is discharged into the air; some fine material may be blown into the interticies of relatively coarse beds on the way up the hole. It was suggested to the geologist supervisor that some of the clay size material be collected on a wet plate at the end of the discharge hose and that this be checked for radioactivity.

The drill cuttings are logged using a hand lens and the data is plotted on strip logs on a scale of 20 feet to the inch.

The holes had not been probed for radioactivity at the time of the inspection, and no ore zones had been established. Eighty-eight samples from hole 19 had been sent to Brown Laboratories for assay.

Some difficulty in recovery was encountered in hole 7-a. Attempts were made to increase the recovery by varying the amount of water injected into the air blowing system. Apparently the finer grained beds require somewhat more moisture in the air system for good recovery than do coarser beds. This had not been definitely

established, however. The driller is conscientious and is willing to experiment to obtain the best recovery.

None of the holes caved while being drilled, but some caving occurred in hole 19 about two days after drilling was completed.

It was reported that the Haiwee Ridge area, including the entire Coso Uranium property, has been mapped under an A.E.C. grant by Robert Powers, a graduate student at the Johns Hopkins University, but the map and report are not yet obtainable.

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of January, 1957 Docket No. DMEA 4191 Contract No. Idm-E994
Operator's Name Coso Uranium, Inc. Minerals
Address 2485 American Avenue, Long Beach 6, California
Contract Amount, $ 30,725.00 Government Participation: 75 % Amount, $ 23,044.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Rotary	4012.72	0.00	4012.72			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental	995.38	0.00	995.38			
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment	1407.00					
Sampling and Analysis		0.00	1407.00			
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	7215.10	0.00	7215.00			

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Feb. 20, 1957 *Payee Coso Uranium, Inc.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 5411 32

Signature
(Authorized Certifying Officer)

Date Mar 2 1957 Vou. No. SF-DMEA-22

(See other side)

RECEIVED MAR 5 1957 D.M.E.A.

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E 994 in accordance with the terms of the contract.

Signature [signature] Title Mining Engineer Date 2/25/57

for B. H. Sheahan

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature [signature] Title Executive Officer Date 2/25/57

S. Ricker

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of January 1957 Docket No. DMEA [illegible] Contract No. [illegible]
Operator's Name Geso Uranium, Inc. Minerals [illegible]
Address 24 S American Ave., Lon, Norton, Colo.

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn [illegible]	Foot	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Auger [illegible]	Foot	552.72	[illegible]	552.72	[illegible]	[illegible]	[illegible]	[illegible]
Stripping								
Trenching								
Test Pits								
Roads and Trails [illegible]	Hour	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample Analysis	Each	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL DISTRIBUTED COSTS		[illegible]		[illegible]				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								[illegible]

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date Feb. 20, 1957 Operator Geso Uranium, Inc.

Per [illegible] Title President

REMARKS: Net of assaying 120 samples at total cost of $[illegible] per attached invoice. DMA estimated assaying 172 samples at cost of $[illegible] which we have applied herein instead of greater actual cost. See our assaying letter of 8/28/57 relative to assaying and reading.

→ NOTE.—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.

(Instructions on reverse)

(For Government use only) [illegible]

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

EMMET R. CULLITY
110 SOUTH BRYN MAWR WAY
WHITTIER, CALIFORNIA
OXFORD 41-4201

February 18, 1957

Mr. S. Ricker, Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-491 (Uranium)
Coso Uranium, Inc.
Contract No. Idm-E994

Dear Mr. Ricker:

Relative to the subject contract we enclose reports for the month of January as follows:

5 copies, DMEA Form MF-104 with documentation

5 " DMEA Form MF-104A

5 " Weekly progress reports by John A. Holmquist, Geologist

1 " Drill hole logs by John A. Holmquist

5 " Drill hole sample assays by The Brown Laboratory

1 " Summary report or narrative by Stuart S. Merwin, geological engineer, Colorado Exploration Company

1 " Grid map with locations of DH-200, 201, 202, 41, 42.

As discussed with you on the phone February 15, our contract with Colorado Exploration Company is for drilling at unit price of $2.13 per foot for the first 2,000 feet of holes and $1.88 per foot for additional drilling. Thus the average unit cost is $2.00 per foot for the 4,200 feet of drilling in Stage 1, as authorized by our DMEA contract.

As evidenced by the appended invoices of the Brown Laboratory, we have so far incurred expense of $1,821.49 for the analyses of 428 drill hole samples. In dealing with the low grade uranium mineralization of the Coso lake beds we found it advisable to submit for chemical analyses more than the anticipated number of interval samples, rather than depend on scintillation counter checks on drill cuttings. It was also deemed advisable, because we were not getting dependable probe logs, to have the interval samples of three holes assayed radiometrically as well as chemically in order to obtain an equilibrium factor.

Our January voucher for reimbursement of assaying costs includes the $1,407.00 for 402 samples as authorized for Stage I of our DMEA contract. However, your authorization is requested to draw on Stage III funds for the additional costs of sample analyses which amount to $414.49 in the current invoicing to us and will run to an estimated total overage of $1,000 in Stage I.

As discussed with you on the phone and with your Mr. Sheehan at the job-site, we have abandoned drill hole locations 13, 15, and 22, which are now known to be to the east of possible uranium mineralization in the area under investigation, and have relocated these holes as DH-200,201, and 202 to the west of DH-20, 8 and 7A respectively. We request your authorization to drill these three relocated holes as part of Stage I and two additional holes, DH-41 and 42, which are in the northwest trend of the significant mineralization found in DH-26, 20, 8 and 7A. The locations of the five holes are shown on the enclosed map.

As of February 15, we have drilled 25 holes for a total of 3,381 feet; and upon completion of the proposed five holes, we estimate the total of Stage I drilling will be 4,200 feet as now authorized.

Yours very truly,

Emmet R. Cullity

Emmet R. Cullity, for
Coso Uranium, Inc.

ERC:jc

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 1-29-57
Order No. 8465-S

Material: Ore Samples 57
Received: 1-26-57
For: Analysis

Lab. No.	Your No.		Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8465-1	7A	51-54		0.013	0.02		
8465-2	7A	54-57		0.02	0.02		
8465-3	7A	57-60		0.02	0.02		
8465-4	7A	60-63		0.02	0.01		
8465-5	7A	63-66		0.010	0.01		
8465-6	7A	66-69		0.013	-0.01		
8465-7	7A	75-78		0.02	0.03		
8465-8	7A	78-81		0.03	0.03		
8465-9	7A	81-84		0.03	0.02		
8465-10	7A	84-87		0.08	0.08		
8465-11	7A	87-90		0.12	0.13		
8465-12	7A	90-93		0.11	0.10		
8465-13	7A	93-96		0.08	0.07		
8465-14	7A	96-99		0.05	0.05		
8465-15	7A	99-102		0.07	0.08		
8465-16	7A	102-105		0.06	0.06		
8465-17	7A	105-108		0.05	0.05		
8465-18	7A	108-111		0.04	0.04		
8465-19	7A	111-114		0.03	0.04		
8465-20	7A	114-117		0.04	0.04		
8465-21	7A	117-120		0.02	0.03		
8465-22	8	51-54			0.02		
8465-23	8	54-57			0.02		
8465-24	8	57-60			0.09		
8465-25	8	60-63			0.21		
8465-26	8	63-66			0.19		
8465-27	8	66-69			0.08		
8465-28	8	69-72			0.05		
8465-29	8	72-75			0.05		
8465-30	8	75-78			0.04		

H. D. Bro

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 1-29-57
Order No. 8465-S

Material: Ore Samples 57
Received: 1-26-57
For: Analysis

Lab. No.	Your No.		Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8465-31	8	78-81			0.06		
8465-32	8	81-84			0.07		
8465-33	8	84-87			0.04		
8465-34	8	87-90			0.04		
8465-35	8	90-93			0.04		
8465-36	8	93-96			0.04		
8465-37	20	60-63			0.02		
8465-38	20	63-66			0.02		
8465-39	20	66-69			0.02		
8465-40	20	69-72			0.02		
8465-41	20	72-75			0.02		
8465-42	20	75-78			0.08		
8465-43	20	78-81			0.08		
8465-44	20	81-84			0.07		
8465-45	20	84-87			0.07		
8465-46	20	87-90			0.05		
8465-47	20	90-93			0.05		
8465-48	20	93-96			0.04		
8465-49	20	96-99			0.16		
8465-50	20	99-102			0.05		
8465-51	20	102-105			0.08		
8465-52	20	105-108			0.03		
8465-53	20	108-111			0.03		
8465-54	20	159-162			0.03		
8465-55	20	162-165			0.02		
8465-56	20	165-168			0.01		
8465-57	20	168-171			0.01		

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 1-30-57
Order No. 8470-S

Material: Ore Samples 88
Received: 1-28-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8470-1	19	0-3	0.006	0.008		
8470-2	19	3-6	0.005	0.006		
8470-3	19	6-9	0.005	0.006		
8470-4	19	9-12	0.002	0.006		
8470-5	19	12-15	0.005	0.005		
8470-6	19	15-18	0.004	0.003		
8470-7	19	18-21	0.002	0.008		
8470-8	19	21-24	0.005	0.005		
8470-9	19	24-27	0.003	0.005		
8470-10	19	27-30	0.006	0.010		
8470-11	19	30-33	0.007	0.008		
8470-12	19	33-36	0.006	0.007		
8470-13	19	36-39	0.009	0.010		
8470-14	19	39-42	0.009	0.012		
8470-15	19	42-45	0.004	0.005		
8470-16	19	45-48	0.005	0.006		
8470-17	19	48-51	0.006	0.013		
8470-18	19	51-54	0.007	0.009		
8470-19	19	54-57	0.011	0.006		
8470-20	19	57-60	0.007	0.006		
8470-21	19	60-63	0.008	0.008		
8470-22	19	63-66	0.007	0.010		
8470-23	19	66-69	0.005	0.008		
8470-24	19	69-72	0.007	0.013		
8470-25	19	72-75	0.011	0.012		
8470-26	19	75-78	0.010	0.013		
8470-27	19	78-81	0.005	0.013		
8470-28	19	81-84	0.007	0.018		
8470-29	19	84-87	0.005	0.015		
8470-30	19	87-90	0.007	0.015		

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 1-30-57
Order No. 8470-S

Material: Ore Samples 88
Received: 1-28-57
For: Analysis

Lab. No.	Your No.		Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8470-31	19	90-93		0.008	0.012		
8470-32	19	93-96		0.014	0.019		
8470-33	19	96-99		0.014	0.015		
8470-34	19	99-102		0.02	0.02		
8470-35	19	102-105		0.014	0.016		
8470-36	19	105-108		0.02	0.014		
8470-37	19	108-111		0.009	0.013		
8470-38	19	111-114		0.02	0.015		
8470-39	19	114-117		0.010	0.015		
8470-40	19	117-120		0.014	0.013		
8470-41	19	120-123		0.02	0.019		
8470-42	19	123-126		0.02	0.015		
8470-43	19	126-129		0.02	0.017		
8470-44	19	129-132		0.013	0.012		
8470-45	19	132-135		0.014	0.02		
8470-46	19	135-138		0.014	0.013		
8470-47	19	138-141		0.012	0.012		
8470-48	19	141-144		0.02	0.019		
8470-49	19	144-147		0.04	0.04		
8470-50	19	147-150		0.03	0.03		
8470-51	19	150-153		0.02	0.018		
8470-52	19	153-156		0.03	0.03		
8470-53	19	156-159		0.04	0.02		
8470-54	19	159-162		0.02	0.03		
8470-55	19	162-165		0.04	0.03		
8470-56	19	165-168		0.02	0.03		
8470-57	19	168-161		0.03	0.02		
8470-58	19	171-174		0.02	0.02		
8470-59	19	174-177		0.02	0.013		
8470-60	19	177-180		0.014	0.011		

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 1-30-57

Order No. 8470-S

Material: Ore Samples 88
Received: 1-28-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8470-61	19	180-183	0.014	0.010		
8470-62	19	183-186	0.016	0.012		
8470-63	19	186-189	0.02	0.013		
8470-64	19	189-192	0.02	0.015		
8470-65	19	192-195	0.02	0.013		
8470-66	19	195-198	0.011	0.013		
8470-67	19	198-201	0.02	0.015		
8470-68	19	201-204	0.014	0.016		
8470-69	19	204-207	0.02	0.014		
8470-70	19	207-210	0.03	0.02		
8470-71	19	210-213	0.02	0.012		
8470-72	19	213-216	0.02	0.017		
8470-73	19	216-219	0.02	0.012		
8470-74	19	219-222	0.03	0.03		
8470-75	19	222-225	0.03	0.03		
8470-76	19	225-228	0.02	0.02		
8470-77	19	228-231	0.02	0.02		
8470-78	19	231-234	0.02	0.02		
8470-79	19	234-237	0.02	0.02		
8470-80	19	237-240	0.02	0.02		
8470-81	19	240-243	0.02	0.016		
8470-82	19	243-246	0.03	0.02		
8470-83	19	246-249	0.03	0.02		
8470-84	19	249-252	0.02	0.02		
8470-85	19	252-255	0.004	0.013		
8470-86	19	255-258	0.010	0.008		
8470-87	19	258-261	0.010	0.007		
8470-88	19	261-264	0.007	0.010		

Analyst:

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-11-57

Order No. 8478-S

Material: Ore Samples 33

Received: 1-31-57

For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8478-1	27A 45-48			0.03		
8478-2	27A 48-51			0.009		
8478-3	27A 69-72			0.04		
8478-4	27A 72-78			0.05		
8478-5	29 33-36			0.010		
8478-6	29 36-39			0.007		
8478-7	29 39-42			0.007		
8478-8	29 42-45			0.007		
8478-9	29 45-48			0.007		
8478-10	29 48-51			0.008		
8478-11	29 81-84			0.008		
8478-12	29 84-87			0.012		
8478-13	29 87-90			0.013		
8478-14	29 90-93			0.013		
8478-15	29 93-96			0.011		
8478-16	29 96-99			0.011		
8478-17	29 99-102			0.013		
8478-18	29 102-105			0.007		
8478-19	29 105-108			0.010		
8478-20	29 108-111			0.012		
8478-21	29 111-114			0.005		
8478-22	29 114-117			0.012		
8478-23	29-117-120			0.008		
8478-24	29 120-123			0.013		
8478-25	29 123-126			0.012		
8478-26	29 126-129			0.014		
8478-27	29 129-132			0.02		
8478-28	29 132-135			0.02		
8478-29	29 135-138			0.02		
8478-30	29 138-141			0.015		
8478-31	29 141-144			0.015		
8478-32	29 144-147			0.010		
8478-33	29 147-150			0.008		

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57
Order No. 8505-[illegible]

Material: Ore Samples 102
Received: 2-7-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8505-1	7A	0-3	0.005	0.009		
8505-2	7A	3-6	0.005	0.004		
8505-3	7A	6-9	0.007	0.007		
8505-4	7A	9-12	0.005	0.003		
8505-5	7A	12-15	0.004	0.004		
8505-6	7A	15-18	0.006	0.011		
8505-7	7A	18-21	0.010	0.007		
8505-8	7A	21-24	0.02	0.013		
8505-9	7A	24-27	0.010	0.014		
8505-10	7A	27-30	0.012	0.009		
8505-11	7A	30-33	0.005	0.010		
8505-12	7A	33-36	0.011	0.013		
8505-13	7A	36-39	0.005	0.009		
8505-14	7A-39-42		0.007	0.011		
8505-15	7A	42-45	0.010	0.010		
8505-16	7A	45-48	0.013	0.011		
8505-17	7A	48-51	0.009	0.016		
8505-18	7A	69-72	0.009	0.011		
8505-19	7A	72-75	0.02	0.019		
8505-20	7A	120-123	0.02	0.015		
8505-21	7A	123-126	0.02	0.03		
8505-22	7A	126-129	0.03	0.03		
8505-23	7A	129-132	0.02	0.02		
8505-24	7A	150-153	0.02	0.013		
8505-25	7A	153-166	0.009	0.014		
8505-26	7A	156-159	0.02	0.013		
8505-27	7A	159-162	0.014	0.016		
8505-28	7A	162-165	0.02	0.013		
8505-29	7A	165-168	0.02	0.02		
8505-30	30	198-200	0.02	0.005		

Analyst.

THE BROWN LABORATORY

2263 Broadway
GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57
Order No. 8505-9

Material: Ore Samples 102
Received: 2-7-57
For: Analysis

Lab. No.	Your No.		Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8505-31	16	45-48			0.014		
8505-32	16	48-51			0.004		
8505-33	16	51-54			0.009		
8505-34	16	54-57			0.010		
8505-35	16	57-60			0.013		
8505-36	16	60-63			0.011		
8505-37	17	57-60			0.014		
8505-38	17	60-63			0.011		
8505-39	17	63-66			0.010		
8505-40	17	66-69			0.007		
8505-41	17	69-72			0.009		
8505-42	17	72-75			0.005		
8505-43	17	75-78			0.013		
8505-44	17	78-81			0.012		
8505-45	17	81-84			0.02		
8505-46	17	84-87			0.02		
8505-47	17	87-90			0.012		
8505-48	17	90-93			0.02		
8505-49	17	93-96			0.012		
8505-50	23	33-36			0.012		
8505-51	23	36-39			0.02		
8505-52	23	39-42			0.015		
8505-53	23	42-45			0.02		
8505-54	23	45-48			0.02		
8505-55	24	45-48			0.014		
8505-56	24	48-51			0.02		
8505-57	24	51-54			0.013		
8505-58	24	54-57			0.014		
8505-59	24	57-60			0.006		
8505-60	24	60-63			0.017		

W. D. Brown
Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

- W.O. Merritt
  Coso Uranium, Inc.
- 2485-D American Avenue
  Long Beach 6, California
-

Date 2-8-57

Order No. 8505-8

Material: Ore Samples 102

Received: 2-7-57

For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8505-61	24 63-66			0.016		
8505-62	24 66-69			0.010		
8505-63	24 69-72			0.007		
8505-64	24 72-75			0.007		
8505-65	24 75-78			0.007		
8505-66	24 78-81			0.010		
8505-67	24 81-84			0.014		
8505-68	24 84-87			0.007		
8505-69	24 87-90			0.009		
8505-70	24 90-93			0.007		
8505-71	25 120-123			0.011		
8505-72	25 123-126			0.016		
8505-73	25 126-129			0.05		
8505-74	25 129-132			0.011		
8505-75	25 132-135			0.011		
8505-76	25 135-138			0.012		
8505-77	25 138-141			0.013		
8505-78	25 141-144			0.02		
8505-79	25 144-147			0.016		
8505-80	25 147-150			0.011		
8505-81	25 150-153			0.009		
8505-82	25 153-156			0.016		
8505-83	25 156-159			0.02		
8505-84	25 159-162			0.009		
8505-85	25 162-165			0.009		
8505-86	25 165-168			0.011		
8505-87	25 168-171			0.009		
8505-88	25 171-174			0.017		
8505-89	25 174-177			0.012		
8505-90	25 177-180			0.009		

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57
Order No. 8505-S

Material: Ore Samples 102
Received: 2-7-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8505-91	25	180-183		0.015		
8505-92	25	183-186		0.006		
8505-93	25	186-189		0.006		
8505-94	25	189-192		0.010		
8505-95	25	192-195		0.017		
8505-96	25	195-198		0.016		
8505-97	25	198-201		0.017		
8505-98	25	201-204		0.011		
8505-99	32A	6-9		0.009		
8505-100	32A	18-21		0.016		
8505-101	32A	30-33		0.012		
8505-102	32A	42-45		0.015		

Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57
Order No. 8504-8

Material Ore Samples 148
Received 2-6-57
For Analysis

Lab. No.	Your No.	Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8504-1	26	93-96		0.014		
8504-2	26	96-99		0.009		
8504-3	26	99-102		0.016		
8504-4	26	102-105		0.02		
8504-5	26	105-108		0.018		
8504-6	26	108-111		0.016		
8504-7	26	111-114		0.014		
8504-8	26	114-117		0.011		
8504-9	26	117-120		0.012		
8504-10	26	120-123		0.010		
8504-11	26	123-126		0.018		
8504-12	26	126-129		0.015		
8504-13	26	129-132		0.020		
8504-14	26	132-135		0.03		
8504-15	26	135-138		0.03		
8504-16	26	138-141		0.06		
8504-17	26	141-144		0.04		
8504-18	26	144-147		0.03		
8504-19	26	147-150		0.02		
8504-20	26	150-153		0.02		
8504-21	26	153-156		0.019		
8504-22	26	156-159		0.04		
8504-23	26	159-162		0.04		
8504-24	26	162-165		0.04		
8504-25	26	165-168		0.04		
8504-26	26	168-171		0.05		
8504-27	26	171-174		0.04		
8504-28	26	174-177		0.03		
8504-29	26	177-180		0.03		
8504-30	26	180-183		0.03		

N. D. Brown
Analyst.

THE BROWN LABORATORY

2263 Broadway

GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57

Order No. 8504-S

Material: Ore Samples 148
Received: 2-6-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU$_3$O$_8$	Chemical %U$_3$O$_8$	%V$_2$O$_5$	%CaCO$_3$
8504-31	26	183-186		0.03		
8504-32	26	186-189		0.03		
8504-33	26	189-192		0.03		
8504-34	26	192-195		0.02		
8504-35	26	195-198		0.05		
8504-36	26	198-201		0.03		
8504-37	26	201-204		0.02		
8504-38	26	204-207		0.03		
8504-39	26	207-210		0.03		
8504-40	26	210-213		0.02		
8504-41	26	213-216		0.04		
8504-42	26	216-219		0.02		
8504-43	26	219-222		0.016		
8504-44	26	222-225		0.02		
8504-45	26	225-228		0.03		
8504-46	26	228-231		0.02		
8504-47	26	231-234		0.018		
8504-48	26	234-237		0.05		
8504-49	26	237-240		0.04		
8504-50	26	240-243		0.09		
8504-51	30	243-246 (26) 30 Not Marked Out.		0.12		
8504-52	26	246-249		0.09		
8504-53	26	249-252		0.05		
8504-54	26	252-255		0.03		
8504-55	26	255-258		0.03		
8504-56	26	258-261		0.02		
8504-57	26	261-264		0.02		
8504-58	26	264-267		0.016		
8504-59	26	267-270		0.018		
8504-60	26	270-273		0.018		

W. S. Bro
Analyst.

THE BROWN LABORATORY

2263 Broadway
GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6,,California

Date 2-8-57
Order No. 8504-S

Material: Ore Samples 148
Received: 2-6-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8504-61	26	273-276		0.02		
8504-62	30	0-3	0.005	0.011		
8504-63	30	3-6	0.008	0.010		
8504-64	30	6-9	0.005	0.010		
8504-65	30	9-12	0.008	0.004		
8504-66	30	12-15	0.003	0.008		
8504-67	30	15-18	0.006	0.010		
8504-68	30	18-21	0.008	0.008		
8504-69	30	21-24	0.002	0.008		
8504-70	30	24-27	0.006	0.015		
8504-71	30	27-30	0.003	0.006		
8504-72	30	30-33	0.003	0.007		
8504-73	30	33-36	0.009	0.008		
8504-74	30	36-39	0.008	0.008		
8504-75	30	39-42	0.005	0.008		
8504-76	30	42-45	0.007	0.010		
8504-77	30	45-48	0.008	0.010		
8504-78	30	48-51	0.010	0.011		
8504-79	30	51-54	0.011	0.010		
8504-80	30	54-57	0.007	0.010		
8504-81	30	57-60	0.009	0.008		
8504-82	30	60-63	0.009	0.013		
8504-83	30	63-66	0.008	0.010		
8504-84	30	66-69	0.004	0.010		
8504-85	30	69-72	0.009	0.011		
8504-86	30	72-75	0.007	0.016		
8504-87	30	75-78	0.009	0.015		
8504-88	30	78-81	0.012	0.02		
8504-89	30	81-84	0.009	0.016		
8504-90	30	84-87	0.008	0.014		

Analyst.

THE BROWN LABORATORY

2263 Broadway
GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57
Order No. 8504-8

Material: Ore Samples 148
Received: 2-6-57
For: Analysis

Lab. No.	Your No.	Description	Radiometric %eU_3O_8	Chemical %U_3O_8	%V_2O_5	%$CaCO_3$
8504-91	30	87-90	0.010	0.017		
8504-92	30	90-93	0.012	0.015		
8504-93	30	93-96	0.010	0.016		
8504-94	30	96-99	0.011	0.016		
8504-95	30	99-102	0.012	0.016		
8504-96	30	102-105	0.03	0.03		
8504-97	30	105-108	0.013	0.02		
8504-98	30	108-111	0.03	0.04		
8504-99	30	111-114	0.04	0.05		
8504-100	30	114-117	0.02	0.02		
8504-101	30	117-120	0.02	0.02		
8504-102	30	120-123	0.013	0.017		
8504-103	30	123-126	0.011	0.015		
8504-104	30	126-129	0.009	0.02		
8504-105	30	129-132	0.02	0.010		
8504-106	30	132-135	0.02	0.02		
8504-107	30	135-138	0.03	0.04		
8504-108	30	138-141	0.02	0.02		
8504-109	30	141-144	0.02	0.03		
8504-110	30	144-147	0.014	0.03		
8504-111	30	147-150	0.02	0.02		
8504-112	30	150-153	0.02	0.02		
8504-113	30	153-156	0.02	0.02		
8504-114	30	156-159	0.012	0.010		
8504-115	30	159-162	0.014	0.013		
8504-116	30	162-165	0.012	0.014		
8504-117	30	165-168	0.014	0.010		
8504-118	30	168-171	0.014	0.010		
8504-119	30	171-174	0.014	0.018		
8504-120	30	174-177	0.010	0.015		

Analyst.

THE BROWN LABORATORY

2263 Broadway
GRAND JUNCTION, COLORADO

ANALYTICAL DEPARTMENT

CHapel 2-4589

CERTIFICATE OF ANALYSIS

TO

W.O. Merritt
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Date 2-8-57
Order No. 8504-S

Material: Ore Samples 148
Received: 2-6-57
For: Analysis

Lab. No.	Your No.		Description	Radiometric %eU3O8	Chemical %U3O8	%V2O5	%CaCO3
8504-121	30	177-180		0.005	0.018		
8504-122	30	180-183		0.005	0.011		
8504-123	30	183-186		0.005	0.016		
8504-124	30	186-189		0.013	0.011		
8504-125	30	189-192		0.010	0.010		
8504-126	30	192-195		0.014	0.013		
8504-127	30	195-198		0.011	0.019		
8504-128	31A	48-51			0.02		
8504-129	31A	51-54			0.018		
8504-130	31A	54-57			0.016		
8504-131	31A	57-60			0.013		
8504-132	31A	60-63			0.014		
8504-133	31A	63-66			0.019		
8504-134	31A	66-69			0.02		
8504-135	31A	69-72			0.018		
8504-136	31A	72-75			0.012		
8504-137	31A	75-78			0.009		
8504-138	31A	78-81			0.009		
8504-139	31A	81-84			0.012		
8504-140	31A	84-87			0.010		
8504-141	31A	87-90			0.012		
8504-142	31A	90-93			0.011		
8504-143	31A	93-96			0.012		
8504-144	31A	96-99			0.013		
8504-145	31A	99-102			0.009		
8504-146	31A	102-105			0.013		
8504-147	31A	105-108			0.011		
8504-148	31A	108-111			0.013		

H. D. Brown
Analyst.

STATEMENT

COLORADO EXPLORATION COMPANY

IN ACCOUNT WITH

COSO URANIUM, Inc.
c/o J. Robert Post, Jr.
2485-D American Avenue
Long Beach, California

Drilling & Geological Investigation
Period 1-1 thru 1-31-57

TOTAL FOOTAGE DRILLED - Month of January, 1957

2,000 Ft. @ $2.13/Ft.	$4,260.00
294 Ft. @ $1.88/Ft.	552.72
TOTAL DUE	$4,812.72

1117 WASHINGTON AVE.
GOLDEN, COLORADO

CROWNVIEW 6-3357
P.O. BOX 500

KERBACH-McCUTCHEN

Heavy Equipment Rentals

Route 2 • Box 4 • Telephone 6151

BISHOP, CALIFORNIA

January 19, 1957

Coso Uranium Inc.

Olancha, California.

Bulldozer rental Jan. 2, 1957 thru Jan.15 1957

62.2 hours @	$ 16.00per hr	$ 995.38

COSO EXPLORATION PROJECT

PROGRESS REPORT: January 1 thru January 12, 1956

Exploration work was commenced Jan.1, 1957 on lode claims owned by Coso Uranium, Inc., located in S.25,T.20S.,R.37E.,and in S.25, T.20S.,R.37½E.,Inyo County, California.

Surveying

A preliminary drill grid including five fences of 28 drill locations has been surveyed by transit using stadia measurments and was laid out in accordance with Schedule I of a DMEA-approved program for the property. Ground control was based on two of a number of triangulation stations established by Hycon Aerial Surveys, Inc. indicated on their map of the property, dated Dec. 1955, as Coso"B" and Coso"C".

Four of the 28 locations (0,7,31,&32) have been offset for distances up to 55 ft. for the purpose of gaining easier access and/or additional geologic knowledge that would not be realized by their specified locations. Four locations (12,13,15,&22) were unattainable by tractor excavation due to large boulders or hard ground and were temporarily abandoned at the discretion of E.R. Cullity. All other locations and access roads have been adequately prepared. The final coordinates and elevation of each drill hole will be surveyed with transit and chain as time permits.

Geology

I have received, on loan from J.R.Post,Jr.,two geological reports on the area and am using these to supplement field observations. Lithologic and radiometric logging of the drill cuttings is not up todate but should be by the end of the next report period.

Rotary Drilling

Drill progress has been slow but should improve as equipment and the knowledge of drilling conditions improves. To date the possible advantages of water-drilling have not been considered to justify their added expense in cost, time, and sample handling.

Drill hole No. 19:

Collared 1-2-57

Completed 1-4-57

T.D. - 264 feet

The probe indicated several zones of anomalous radioactivity though all appeared to be composed of thin streaks as recorded character was very jagged. Samples from the entire depth of this hole were sent for assay.

Drill hole No. 20:

Collared 1-4-57

Completed 1-11-57

T.D. - 253 feet

Fair probe response was indicated between 55 and 105 feet; character was jagged. One quarter of the sampled intervals from 60 to 111 feet and 160 to 170 feet will be sent for assay on the basis of sample and probe response.

Drill hole No. 8

Collared 1-11-57

Abandoned 1-12-57 at 127 feet of depth

Drilling conditions were difficult due to loose ground below 93 feet and no samples were recovered below this depth. This hole has not been probed to date due to drill rods in the hole.

Any decision as to further drilling at this site will be deferred to a later date. An estimated 30 to 50 feet of potential section remains unpenetrated at this location.

Disposition of Samples

The entire sample from each three foot interval is split four ways. When warranted by radiometric response one quarter is shipped for assay. All portions of each interval, other than assayed portions will be stored in a shed in the town of Clancha about 12 mi. distant from the property.

Portions of samples intended for assay will be sent from Lone Pine, Calif., by Railway Express, to the Brown Laboratories, Grand Junction, Colo. This assayer has been advised to prepare five copies of the assay results to be dispersed as follows: three copies to J.R.Post,Jr., one copy to S.S.Merwin, and one copy to J.A.Holmquist.

Respectfully submitted,

John A. Holmquist

John A. Holmquist

Colorado Exploration Co.
Lone Pine, California
January 21, 1957

PROGRESS REPORT-JANUARY 13 thru 19, 1957
COSO EXPLORATION PROJECT
COSO HILLS, CALIFORNIA

PERSONNEL:

J. A. Holmquist
A. Beatty
A. L. Seip
J. M. Cooper

SURVEYING:

Cooridinates and elevations are now being computed from the preliminary survey. These will be plotted on a map for use in the weekly progress reports.

GEOLOGY:

Lithologic and radiometric logging of drill cuttings is up to date. All drill holes have been probed to date with the exception of holes No.7A and No.28. The probe unit is in for repair and will again be operative by Jan. 23. Probe results have so far proven unreliable for grades of less than .10% indicated U_3O_8 and this will be remodied in the shop.

ROTARY DRILLING:

The drill was operated on a one-shift basis on the Linda Sue 3 and Esther 4 claims.

Hole No. 19 (cont'd.): Collar Elev.(approx.): 4729.8
Coordinates(approx.): 46,729 N, 44,521 E

0- 21 Alluvium
21-261 Coso Fm.
261-264 Granite
264 Bottom

Hole No. 20(cont'd): Collar Elev.(approx.): 4681.5
Coordinates(approx.): 46,768 N, 44,326 E

73- 97, 24 feet @ .18% indicated U_3O_8(probe)

0- 21 Alluvium
21-254 Coso Fm.
254-258 Granite
258 Bottom

ROTARY DRILLING(cont'd):

Hole No. 8(cont'd): Collar Elev.(approx.): 4651.9
Coordinates(approx.): 46,985 N, 44,269 E

55- 64, 9 feet @ .36% indicated U_3O_8 (probe)

0- 27 Alluvium
27- 96 Coso Fm.
96-127 Probable Coso Fm. - no sample recovery
127 Bottom - temporarily abandoned. By most recent data proposed bottom is estimated at 224 feet.

Hole No. 7A: Collar Elev.(approx.): 4612.6
Coordinates(approx.): 47,211 N, 44,159 E

Not probed to date.
0- 12 Alluvium
12-132 Coso Fm.
132-150 Probable Coso Fm. - no sample recovery
150-168 Coso Fm.
168-178 Probable Coso Fm. - " " "
178-180 Probable Granite - " " "
180 Bottom - bottomed on basis of drilling firmness

Hole No. 28: Collar Elev.(approx.): 4609.9
Coordinates(approx.): 46,419 N, 44,048 E

Not probed to date.
0- 39 Alluvium
39-120 Coso Fm.
120 Incomplete - drill rod twisted off in hole. Drilling to be resumed when tools are available for retrieving rods and bit still in hole.

Hole No. 27A: Collar Elev.(approx.): 4639.2
Coordinates(approx.): 46,591 N, 44,196 E

0- 33 Alluvium
33- 51 Coso Fm.
51- 69 Probable Coso Fm. - no sample recovery
69-108 Coso Fm.
108 Incomplete

J. A. Holmquist

cc: Colorado Exploration Co.
Golden, Colo.

E. R. Cullity
Whittier, Calif.

J. A. Holmquist
Lone Pine, Calif.

Colorado Exploration Co.
Lone Pine, California
January 28, 1957

PROGRESS REPORT-JANUARY 14 thru 26, 1957
COSO EXPLORATION PROJECT
COSO HILLS, CALIFORNIA

PERSONNEL:

J. A. Holmquist
A. Beatty
A. L. Soip
J. N. Cooper

GEOLOGY:

Lithologic and radiometric logging of drill hole cuttings is up to date. At the present no dependable probe records of drill holes are available due to a malfunctioning probe unit. An attempt will be made, during the coming week, to remedy this.

ROTARY DRILLING:

The drill was operated on a one-shift basis on the Esther 2 and Esther 4 claims.

Hole No. 85: Collar Elev.(approx.): 4785.4
Coordinates(approx.): 46,508 N, 44,877 E

0- 18 Alluvium
18 Incomplete

Hole No. 86: Collar Elev.(approx.): 4784.5
Coordinates(approx.): 46,545 N, 44,581 E

0-38 Alluvium
38- 60 Coso Fm.
60- 65 Probable Coso Fm.- no sample recovery
65-287 Coso Fm.
287-289 Coso-Granite contact zone
289-290 Granite
290 Bottom

Hole No. 87A(cont'd.): Collar Elev.(approx.) 4830.8
Coordinates(approx.): 46,591 N, 44,596 E

100-189 Coso Fm.
189-191 Granite
191 Bottom

Hole No. 29: Collar Elev.(approx.): 4680.5
Coordinates(approx.): 46,373 N, 44,243 E

0- 21 Alluvium
21-165 Coso Fm.
165-171 Granite
171 Bottom

Hole No. 30: Collar Elev.(approx.): 4724.5
Coordinates(approx.): 46,332 N, 44,439 E

0- 36 Alluvium
36-196 Coso Fm.
196-200 Granite
200 Bottom

Hole No. 31A: Collar Elev.(approx.): 4745.1
Coordinates(approx.): 46,328 N, 44,640 E

Alluvium excavated in building location
0-129 Coso Fm.
129-151 Granite
151 Bottom

SAMPLE SHIPMENTS:

Because of the slow rate of travel for rail shipments out of Lone Pine assay samples will henceforth be shipped from Olancha, Calif. to Los Angeles and thence to Grand Junction, Colo. by truck.

J. A. Holmquist

J. A. Holmquist

enc: one Drill Data Sheet(Jan. 1 thru 28)
nine drill hole logs

cc: Colorado Exploration Co.
Golden, Colo.

E. R. Cullity
Whittier, Calif.

J. A. Holmquist
Lone Pine, Calif.

Colorado Exploration Co.
Lone Pine, California
February 3, 1957

PROGRESS REPORT: JANUARY 27 thru FEBRUARY 2, 1957
COSO EXPLORATION PROJECT
COSO HILLS, CALIFORNIA

PERSONNEL:

J. A. Holmquist
A. Beatty
A. L. Seip
J. M. Cooper

GEOLOGY:

Lithologic and radiometric logging of drill hole cuttings is up to date. Geologic cross sections on the five drill hole fences trending NW-SE are being drafted.

ROTARY DRILLING:

Hole No. 16: Collar Elev.(approx.): 4891.8
Coordinates(approx.): 46,599 N, 45,108 E

0- 9 Alluvium
9- 77 Coso Fm.
77-79 Granite
79 Bottom

Hole No. 17: Collar Elev.(approx.): 4829.3
Coordinates(approx.): 46,639 N, 44,910 E

0- 3 Alluvium
3- 99 Coso Fm.
99-100.5 Granite
100.5 Bottom

Hole No. 18: Collar Elev.(approx.): 4786.2
Coordinates(approx.): 46,681 N, 44,715 E

0- 19 Alluvium
19-105 Coso Fm.
105-105 Incomplete

Hole No. 23: Collar Elev.(approx.): 4817.0
Coordinates(approx.): 46,423 N, 44,968 E

0- 81 Coso Fm.
81- 85 Granite
85 Bottom

Hole No. 24: Collar Elev.(approx.): 4793.5
Coordinates(approx.): 46,468 N, 44,771 E

0- 15 Alluvium
15- 93 Coso Fm.
93- 95 Granite
95 Bottom

Hole No. 25(cont'd): Collar Elev.(approx.): 4755.4
Coordinates(approx.): 46,508 N, 44,577E

0- 27 Alluvium
27-108 Coso Fm.
108-114 Probable Coso Fm.-no sample recovery
114-210 Coso Fm.
210-213 Granite
213 Bottom

Hole No. 28(cont'd): Collar Elev.(approx.): 4609.9
Coordinates(approx.): 46,419 N, 44,048 E

120 Abandoned

Hole No.332A Collar Elev.(approx.): 4780.6
Coordinates(approx.): 46,302 N, 44,835 E

0- 3 Alluvium
3- 48 Coso Fm.
48- 54 Granite
54 Bottom

J. A. Holmquist

enc: seven drill hole logs

cc: Colorado Exploration Co.
Golden, Colorado

E. R. Cullity
Whittier, Calif.

J. A. Holmquist
Lone Pine Calif.

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
1/23/57	Murphy	700
1-24	Ellis	700
1/25	Selfridge	130
1-25	Chambers	800
1/25	Jones	110
"	Rutledge	100
1-28	C	220
	Nelson	225

JAN 28 1957

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idn- 1994
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Ricker:

Enclosed are the original and five copies of an Amendment No. 3 to the captioned contract signed by the Administrator. Also enclosed are two extra copies for Field Team use.

This amendment is required because the changes in the Estimated Total Cost of the Project and Government Participation items were not provided for in Amendment No. 2. We could have amended these items, but believe adding two more analyses seems the least complicated method.

We have made no change in Category (4) of Amendment No. 2; however, $16.00 per hour for the rental of a dozer unit appears high. Our usual allowance for bulldozing ranges from $12.00 to $15.00 per hour and this includes the operator, oil, gas, etc. Under Amendment No. 2, DMEA can participate in only a true rental of the equipment and if the work is done by an independent contractor we can pay nothing. In addition, in a strict sense of the word, the changing of Category (4) changed a maximum of no dollars.

In a Special Notice in the Minutes (No. 711) of August 29, 1956, the Operating Committee cautioned the Field Teams in their exercise of the Delegation of Authority under Order No. 2808.

Amendment No. 2 has changed the entire scope of the original contract. If the Field Team had recommended a search for large low-grade deposits, averaging approximately 0.05% U_3O_8, it is extremely doubtful that it would have been approved by the Washington Office.

RGR

8623

As Amendment No. 2 has been executed, and possibly part of the work completed, we will have to comply with its terms. However, in the future, if such an amendment is requested by an operator, it is suggested that the Field Team consult with the Washington Office.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

Frank D. Lamb (GCS)

Member, Bureau of Mines

N. E. Nelson (GCS)

Member, Geological Survey

FMMurphy/gla (1-15-57)
1-23-57

cc to: Admr.'s Reading File
Operating Committee

Messrs. JECrawford, 3643
THKiilsgaard, 5224
AEC - Mr. Jack Kratchman
Code 700
Mr. Murphy

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
1/15/57	Murphy	700
"	Ellis	700
1-16	Chambers	800
		130

110
100
225

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Contract No. Idn-8994
White Swan, et al., Groups
Inyo County, California
Coso Uranium, Inc.

Dear Mr. Ricker:

Enclosed are the original and five copies of an Amendment No. 3 to the captioned contract signed by the Administrator. Also enclosed are two extra copies for Field Team use.

This amendment is required as the changes in the Estimated Total Cost of the Project and Government Participation items were not provided for in Amendment No. 2. We could have amended these items, but believe adding two more analyses seems the least complicated method.

Order No. 2808, dated January 4, 1956, delegates authority to the Executive Officers to prepare amendments such as the executed Amendment No. 2. However, it is suggested that the Field Teams should be guided by the Special Notice in the Minutes (No. 711) of the Operating Committee of August 29, 1956.

Sincerely yours,

Chairman, Operating Committee

Enclosures

FMMurphy/gla
1-15-57

Member, Bureau of Mines

Member, Geological Survey

cc to: Admr.'s Reading File
Operating Committee
Messrs. JECrawford, 3643
THKiilsgaard, 5224
Code 700
Mr. Murphy
AEC - Mr. Jack Kratchman

8623

DRAFT
1/23/57
FMMurphy/gla

Dear Mr. Ricker:

Enclosed are the original and five copies of an Amendment No. 3 to the captioned contract signed by the Administrator. Also enclosed are two extra copies for Field Team use.

This amendment is required because the changes in the Estimated Total Cost of the Project and Government Participation items were not provided for in Amendment No. 2. We could have amended these items, but believe adding two more analyses seems the least complicated method.

We have made no change in Category (4) of Amendment No. 2; however, $16.00 per hour for the rental of a dozer unit appears high. Our usual allowance for bulldozing ranges from $12.00 to $15.00 per hour and this includes the operator, oil, gas, etc. Under Amendment No. 2, DMEA can participate in only a true rental of the equipment and if the work is done by an i.e. Independent i.e. Contractor we can pay nothing.

In a Special Notice in the Minutes (No. 711) of August 29, 1956, the Operating Committee cautioned the Field Teams in their exercise of the Delegation of Authority under Order No. 2808.

Amendment No. 2 has changed the entire scope of the original contract. If the Field Team had recommended ~~this change in the search for ore-grade deposits to~~ a search for large low-grade deposits, it is doubtful that it would have been approved by the Washington Office.

As Amendment No. 2 has been executed, and possibly part of the work completed, we will have to comply with its terms. However, in the future, if such an amendment is requested by an operator, it is suggested that the Field Team consult with the Washington Office.

Sincerely yours,

Chairman, Operating Committee

DMEA

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 8 1957

DATE	INITIALS	CODE
	esf	130
		225

1605 Evans Avenue
Reno, Nevada

January 3, 1956

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California
Contract Idm-E 994

Enclosed are the Government, Division, and Docket copies of Amendment No. 2 to subject contract. The remaining copies have been distributed in the usual manner.

This amendment was carefully reviewed by our engineers and geologists after receipt of request for change by the Operator. Three copies of this request, dated December 11, 1956, are enclosed.

S. Ricker

Encls.

BUREAU OF MINES
WASHINGTON, D. C.
JAN 7 9 59 AM '57

Docket copy

AMENDMENT NO. 2

Docket No. DMEA-4191 Mineral Uranium

Exploration Project Contract Idm-E 994

Date of Contract August 21, 1956

Date of Amendment December 21, 1956

Operator Cosa Uranium, Inc.

JUSTIFICATION

Recent metallurgical tests have shown that the ore can be up-graded successfully and the Operator wishes to explore for a large poluted tonnage of 0.05 percent U_3O_8 ore instead of a smaller tonnage of 0.20 percent U_3O_8 as formerly intended. The overall picture remains the same but the Amendment will explore nearly twice the area at the same cost.

OFFICIAL FILE COPY
D M E A
RECEIVED JAN 7 1957

DATE	INITIALS	CODE

S. Ricker, Executive Officer
DMEA Field Team, Region III

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 7 1957
DATE | INITIALS | CODE

COSO URANIUM, INC.
2485-D American Avenue
Long Beach 6, Calif.

December 11, 1956

Mr. S. Ricker, Chief Executive Officer
Defense Minerals Exploration Agency
1605 Evans Avenue
Reno, Nevada

Dear Sir:

Subject: DMEA Docket No. 4191
Contract No. Idm-E994
Coso Uranium, Inc.

We request your approval of our proposal to amend the subject contract so as to more thoroughly explore the existing possibility of developing several million tons of low grade uranium ore in the Coso lake beds.

Surface propsecting and a few underground workings have disclosed uranium values of the order of .05% U_3O_8 in the unconsolidated sandstone of the Coso series. Laboratory testing has demonstrated that this low grade ore can be economically upgraded by a simple slime-sand separation after crushing to -1/4 inch and wet scrubbing. Tests by Southwestern Engineering Company of a sample submitted by Coso Uranium, Inc. containing .053% U_3O_8 yielded a slime product of .28% U_3O_8 grade with 80% recovery.

The area considered to be most favorable for the initial exploratory effort is a trough-like basin approximately 900 feet wide and 1400 feet long, exclusive of elongated

irregularities and extensive outlying beds. The basin lies immediately north of coordinate N 46000 and west of E 45600 as noted on the attached map (Exhibit M). Approximately one-third of this area is covered by alluvium which is probably 15 feet deep on the average. In the westerly part of the basin the lake beds are 100 feet thick in one partially exposed section and may attain maximum thickness of 200 feet to the underlying granite contact. The beds thin out toward the east but may average 80 feet thick over the basin area. Each foot in depth of beds over the favorable area of approximately 29 acres contains 90,000 tons with weight factor of 14 cubic feet per ton. At present there are no available criteria for measuring the proportional thickness or lateral extent of the uranium bearing beds relative to the total. The proposed exploration would provide this and other essential information.

We propose for Stage I of the subject contract the substitution of 28 rotary drill holes through the Coso lake beds and into the decomposed surface of the underlying granite, instead of the 9 churn drill holes previously specified. We estimate the average depth of the proposed holes as 150 feet, ranging from 225 feet (including overburden) in the westerly end of the basin area to 75 feet in the eastern end toward the margin of ancient Coso lake. We propose further that the work specifications and fund allocations for Stages II and III of said contract be held in abeyance for the time being.

The attached map (Exhibit M) illustrates the drill hole pattern proposed for amended Stage I. The proposed 28 holes are designated DH-0 to DH-3 inclusive, DH-7 to DH-13 inclusive, DH-15 to DH-20 inclusive and DH-22 to DH-32 inclusive. The holes are to be drilled dry by rotary drill using air to return the cuttings to the surface and a Duclone type separator for sample collection. The proposed drilling pattern and the method of drilling are the recommendations of consulting engineers Frank H. MacPherson of Grand Junction, Colorado and Emmet R. Cullity of Whittier, California, who have examined the Coso Mine.

Because we are concerned here with exploring for substantial thickness of lake beds of anticipated low average grade, we propose during the progress of drilling to extract and test radiometrically the material penetrated after each five-foot drive instead of the two foot interval previously specified. If the material tested shows significant radioactivity, it will be split for sampling purposes and chemical analysis as specified in the subject contract.

We have bids for Stage I rotary drilling as follows: Partain Exploration Company, Bakersfield, California, $3.00 per foot; Colorado Exploration Company, Golden, Colorado, $2.00 per foot for drilling dry and an additional $0.25 per foot for drilling with water in wet ground. It is improbable that wet

ground will be encountered. Colorado Exploration Company bid includes moving in expense, survey and mapping of drill hole locations, full-time services of competent geologist-supervisor, all needed survey and probe instruments, preparation of samples for assay, report of the results of the drilling program, with maps of geologic and drill hole sections for the correlation of drill hole data.

It is estimated that 4200 feet of drilling will be required to complete the 28 holes. If more than 4200 feet of drilling is required and/or wet ground is encountered which requires drilling with water and consequent $0.25 per foot higher drilling cost, we propose that additional footage may be drilled to complete the holes and/or the higher cost of drilling with water be met by transferring to this work part of the funds provided in subject contract for raising (Item 5, Stage III) and correspondingly reducing the funds available for work under said Item 5, Stage III.

Estimated Costs of Project

Actual Costs

Stage I per proposed amendment

Category (1) Independent Contracts

Rotary drilling, 4200 feet at $2.00/ft. $8,400.00
(Average cost per foot including full-time services of geologist supervisor)

Category (2) Personal Services

Included in cost under Category (1)

Category (3) None

Category (4) Operating Equipment

Subcategory (a) Dozer rental; preparation of drill sites - 68 hours at $16.00/hr. $1,~~024~~ 008.00

Category (5) and (6) None

Category (7) Miscellaneous

Chemical analyses for U_3O_8 content of 400 samples at $3.50/sample 1,400.00

Estimated Total Cost - Stage I $10,8~~24~~08.00

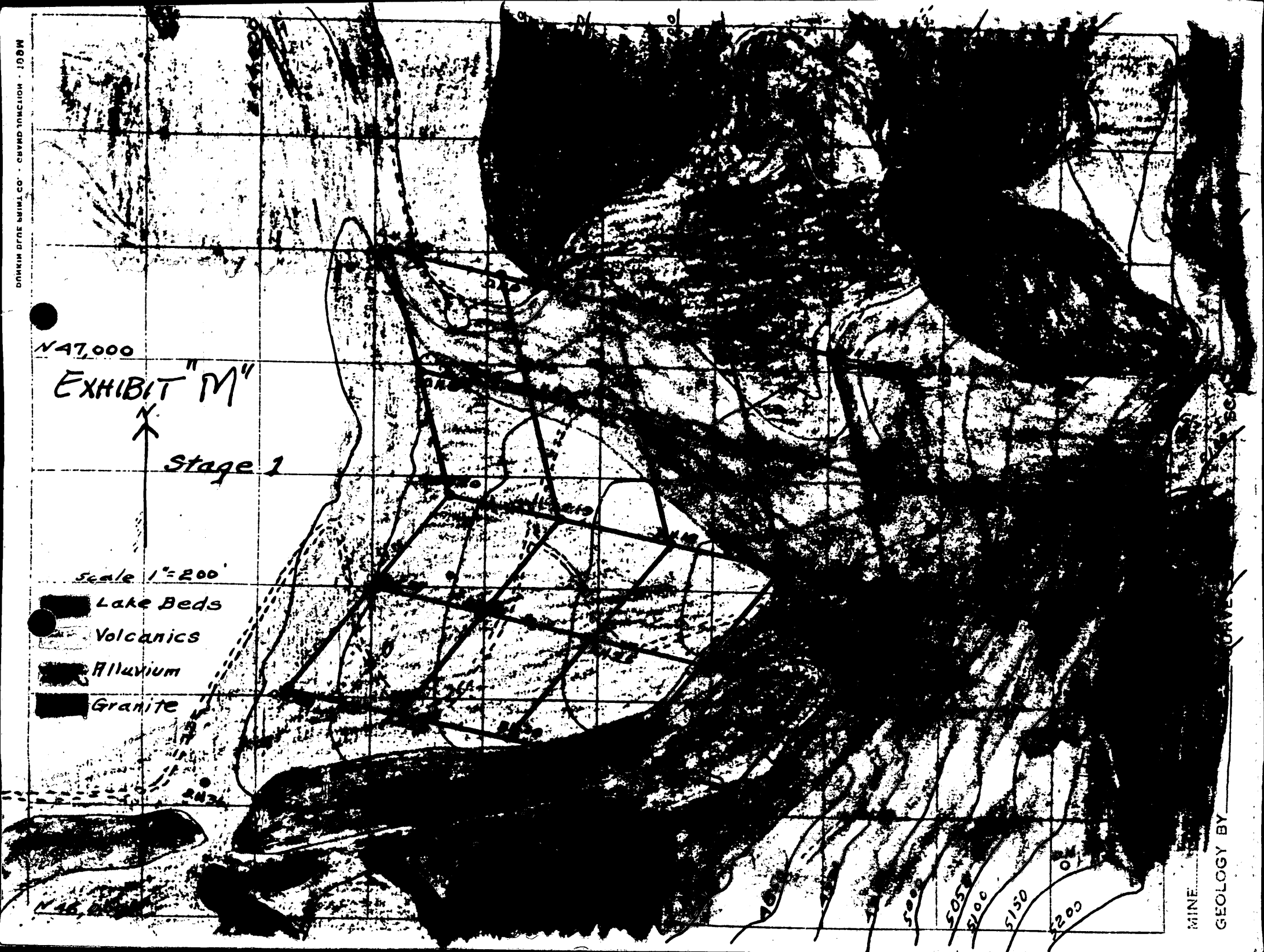
SUMMARY

Estimated Total Cost - Stage I	$10,824.00	
Estimated Total Cost - Stage II (in abeyance)	12,955.00	
Estimated Total Cost - Stage III (in abeyance)	6,946.00	
Estimated Total Cost of Project		$30,725.00
Government's Participation at 75% (rounded)		$23,044.00

Yours very truly,

COSO URANIUM, INC.

W. O. Merritt, President


N47,000
EXHIBIT "M"
Stage 1
Scale 1" = 200'
Lake Beds
Volcanics
Alluvium
Granite
5000
5050
5100
5150
5200
MINE
GEOLOGY BY

RECEIVED
JAN 7 1957
D.M.E.A.

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

OFFICIAL FILE COPY
D M E A
RECEIVED JAN 7 1957

DATE	INITIALS	CODE
1/8/57	[illegible]	800
		225

Office of
Executive Officer
DMEA Field Team
Region II

1605 Evans Avenue
Reno, Nevada

December 31, 1956

Mr. W. O. Merritt, Pres.
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California
Contract No. Idm-E 994

Dear Mr. Merritt:

An examination of your contract indicates the impracticability of requiring complete documentation of the costs incurred as reported on Forms MF-104 (Rev.) and MF-104A, Monthly Progress Reports. Therefore, consistent with authority delegated the Executive Officer, DMEA Field Team, Region II, we hereby waive the requirement for you to provide documentary support of the monthly report, except for support of equipment purchases.

In lieu of documentary support of the monthly report, Mr. G. Mavor, Auditor, Contract Administration and Audit Division, DMEA, will make interim audits of your records and will make a final audit on completion or termination of the contract before the final report is processed for payment.

Sincerely yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

SRicker:ft
cc: Opr. Com. DMEA,
Interior Bldg., Wash. D.C.
Finance Off., Region II
GeoMavor
RMSmith
File

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

RECEIVED DEC 27 1956 D.M.E.A.

1605 Evans Avenue
Reno, Nevada

December 21, 1956

Mr. W. O. Merritt, President
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California
Contract No. Idm-E 994

Dear Mr. Merritt:

We are enclosing the original and five copies of a proposed Amendment No. 2 to above referenced exploration contract signed by the Executive Officer, Defense Minerals Exploration Administration, Region II, for the Government.

If the terms and conditions of the proposed Amendment are satisfactory to you, all six copies should be signed by your firm. The copy marked "Operator's Copy" should be retained by you and the original and other four copies should be returned to this office.

If any part of this Amendment does not meet with your approval, the original and all copies should be returned to this office with your suggested changes.

Very truly yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

Encls.
SRicker:ft

cc: Opr. Com., DMEA, Wash., D.C.
Finance Office, Region II
Geo. Mavor
RMSmith
File

BUREAU OF MINES
WASHINGTON, D. C.

DEC 26 9 57 AM '56

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

November 9, 1956

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare and Miscellaneous Metals Division

Subject: Amendment to contract

Mr. Murphy has reviewed Amendment No. 1, dated October 23, 1956, to Contract No. Idm-E994, Docket No. DMEA-4191, Coso Uranium, Inc. He has approved the amendment, and indicated that no further review is required by the Legal Division.

/s/ Grace L. Ault

Grace L. Ault

Date November 9, 1956

Commodity Uranium

To: Mr. Murphy

Docket No. DMEA-4191, Coso Uranium, Inc.

Contract No. Idm-E 994

Attached is Amendment No. 1, dated October 23, 1956 to be reviewed.

Approved Murphy

Other action None

Please return this slip to me for my records.

Grace Ault

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

RECEIVED NOV 9 1956 DMEA

1605 Evans Avenue
Reno, Nevada

November 7, 1956

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D.C.

From: Actg. Executive Officer, DMEA Field Team Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California
Contract No. Idm-E994

Enclosed are the Government, Docket, and Division executed copies of Amendment No. 1 to subject contract. The remaining copies have been distributed in the usual manner.

Enclosed are three copies of the Operator's request for an extension of time for starting work and copies of justification of extension are attached to the amendment.

Roscoe M Smith

Roscoe M. Smith

Encl.

AMENDMENT NO. 3

Docket No. [illegible] Mineral [illegible]

Exploration Project Contract [illegible]

Date of Contract [illegible]

Date of Amendment [illegible]

Operator [illegible]

JUSTIFICATION

[illegible]

S. Ricker, Executive Officer
DMEA Field Team, Region III

COPY

COPY

COSO URANIUM, INC.
2485-D American Avenue
Long Beach 6, California

Garfield 7-8921

NEvada 6-7806

October 17, 1956

Mr. S. Ricker, Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191

Dear Mr. Ricker:

In reference to the above contract, we have employed the services of Mr. E. J. Cullity of Whittier, California and Mr. Frank H. MacPherson of Grand Junction, Colorado, to advise regarding this exploration program. At the present time they are in need of additional information to be obtained from a test drilling of our lake bed material to ascertain the best type of sampling and cost per foot of the program. We have proceeded to engage a drilling company to make the necessary tests as soon as a rig can be placed on the property.

We, therefore, respectfully request that the starting date of November 1, 1956 be extended to January 2, 1957, so that we can be equipped with ample information to make the program as comprehensive and informative as possible.

Will you please advise the writer if this extension can be granted.

Very truly yours,

COSO URANIUM, INC.

/s/ W. O. Merritt
W. O. Merritt, President

WOM/nl

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

RECEIVED NOV 2 1956 D.M.E.A.

1605 Evans Avenue
Reno, Nevada

October 31, 1956

Mr. W. O. Merritt, President
Coso Uranium, Inc.
2485-D American Avenue
Long Beach 6, California

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California
Contract No. Idm-3994

Dear Mr. Merritt:

We are enclosing the original and five copies of a proposed Amendment No. 1 to above referenced exploration contract signed by the Executive Officer, Defense Minerals Exploration Administration, Region II, for the Government.

If the terms and conditions of the proposed amendment are satisfactory to you, all six copies should be signed by your firm. The copy marked "Operator's Copy" should be retained by you and the original and the other four copies should be returned to this office.

If any part of this amendment does not meet with your approval, the original and all copies should be returned to this office with your suggested changes.

Very truly yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

Encl.

SRicker:gh
cc: Opr. Com., DMEA, Wash., D.C.
Finance Off., Reg. II
Geo. Mavor
R. M. Smith
File

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

RECEIVED OCT 31 1956 D.M.E.A.

1605 Evans Avenue
Reno, Nevada

October 29, 1956

Memorandum

To: Operating Committee, DMEA, Interior Building
Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al, Groups
Inyo County, California
Contract No. Idm-E 994
(Your letter dated August 21, 1956)

Enclosed are the Government, Docket, and Division copies of subject contract executed by the Operator. The remaining copies have been distributed in the usual manner.

Very truly yours,

S. Ricker

Encls.

Opr. Com. DMEA, 8/29/56

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

1605 Evans Avenue
Reno, Nevada

Aug. 27, 1956

Coso Uranium, Inc.
2485 American Avenue
Long Beach, California

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al Groups
Inyo County, California
Contract No. Idm-E 994

Gentlemen:

Enclosed are the original and five copies of referenced exploration contract signed by C. O. Mittendorf, Administrator for the Government. Attached to each contract form, MF-200, are Annex I, (1 page), Exhibit "A" (5 pages), claim map Figure 5, and map Figure 2, showing the approximate locations of the proposed work.

If the terms and conditions of this contract are satisfactory to you, all six copies should be signed by your firm. The copy marked "Operator's copy" should be retained by you and the original and other four copies should be returned to this office.

If any part of the contract does not meet with your approval, the original and all copies should be returned with your suggested changes.

Enclosed are four months supply of MF-104, MF-104A forms, on which you submit your monthly progress reports. A concise narrative report (5 copies) must be attached to MF forms as explained on the back of Form MF-104.

RECEIVED
AUG 29 1956

Please advise us at least seven days before you expect to start work on the contract so that one of our engineers or geologists can meet with your representative on the property to mutually agree on the exact location of the work.

Very truly yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

Encl.

BUREAU OF MINES
WASHINGTON, D. C.

AUG 29 8 27 AM '56

Surname copy

700

Murphy
Ellis
Chambers
Selfridge
Johnson

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

AUG 21 1956

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Groups
Inyo County, California

Dear Mr. Ricker:

Enclosed are the original and five copies of a proposed long-form contract between the Government and Coso Uranium, Inc., signed by the Administrator. Also enclosed for Field Team use are two extra copies each of Annex I and Exhibit "A," and one extra copy of maps Figure 2 and Figure 5, relating to the contract.

Attached to each contract form, MF-200, are Annex I (1page), Exhibit "A" (5 pages), claim map Figure 5, and map Figure 2, showing the approximate locations of the proposed work.

If you and the Applicant find the proposed contract in order, please insert in Article 3 of the contract form the date work shall commence, then have an authorized representative of the corporation sign the original and all copies. Thereafter, kindly distribute the copies in the usual manner.

If any part of the proposed contract does not meet with your approval or the Applicant's, then the original and all copies, including the extra copies, are to be returned to this office with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JB)

Enclosures

APPROVED:

FRANK D. LAMB (JB)
Member, Bureau of Mines

N. E. Nelson (JB)
Member, Geological Survey

FMMurphy/ai 8-16-56 (8-10-56)
CC to: Docket
Admr. Reading File
Operating Committee
Code 700
Mr. Murphy
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

Surname copy

700

Murphy
Ellis
Chambers
Selfridge

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

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al., Grants
Inyo County, California

Dear Mr. Ricker:

Enclosed are the original and five copies of a proposed long-form contract between the Government and Coso Uranium, Inc., signed by the Administrator. Also enclosed for Field Team use are two extra copies each of Annex I and Exhibit "A," and one extra copy of maps Figure 2 and Figure 5, relating to the contract.

Attached to each contract form, DF-200, are Annex I (1 page), Exhibit "A" (5 pages), claim map Figure 5, and map Figure 2, showing the approximate locations of the proposed work.

You will note that the contract has been prepared essentially as recommended by the Field Team, however, instead of combining the cost of supervision with the unit cost of each item of work, the proposed contract sets out the cost of supervision as a separate item.

If you and the Applicant find the proposed contract in order, please insert in Article 3 of the contract form the date work shall commence, then have an authorized representative of the corporation sign the original and all copies. Thereafter, kindly distribute the copies in the usual manner.

If any part of the proposed contract does not meet with your approval or the Applicant's, then the original and all copies, including the extra copies, are to be returned to this office with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

FRANK D. LAMB (GCS)
Member, Bureau of Mines

N. E. Nelson (GCS)
Member, Geological Survey

Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

FMMurphy/ai 8-10-56
cc to: Docket
Admr. Reading File
Operating Committee
Code 700
Mr. Murphy

8-1-56

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

RECEIVED
AUG - 1 1956

August 1, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 4191 (Uranium), Coso Uranium, Inc., White Swan, et al groups, Inyo County, California

I have reviewed the report of examination, DMEA Docket 4191, Coso Uranium, Inc., White Swan, et al groups, Inyo County, California, dated July 18 and received in this office July 24, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The field examiners recommend that the Government participate in exploration of the subject property because of the possibility of discovering a significant amount of secondary minerals of ore grade.

The proposed exploration consists of 1,850 feet of churn drilling at $5.00 per foot, 50 feet of shaft at a unit cost of $46.67, and 650 feet of drifting, crosscutting, and raising. The total estimated cost of the project is $31,781.50, of which the Government's share would be $23,836.12.

We concur in the recommendation of the Field Team that the exploration project be given favorable consideration.

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

Government's Copy

MF-200
(Revised June 1954)

Docket No. DMEA 4191

Commodity Uranium

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Coso Uranium, Inc., a California corporation, whose mailing address is 2485 American Avenue, Long Beach 6, California, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and 2 maps (Figures 2 and 5)

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of California, County of Inyo, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Owner of [5] entire interest in unpatented lode mining claims in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] ..... recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: None

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium The work to be performed is described in Exhibit "A." The Operator on or before shall commence the work, and on or before July 1, 1957 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) ~~shall either have completed the work or shall have incurred allowable costs (see Article 6) in a sum not less than the estimated total allowable cost set forth in Exhibit "A."~~ See Article 13

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ ~~31,130.00~~ 30,725.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ ~~23,348.00~~ 23,044.00 : *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated, total allowable cost of the work.~~ See Article 13

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. See Article 13

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. **See Article 13.**

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *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 a sufficient final report and final account (see Article 7) has been rendered, 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, within 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 crude 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 therof 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 (1½) 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 (½)

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 (1½) percent; on an amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *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.

(h) *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.

(i) *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 production operations.

(j) *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.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

and the phrase "the estimated cost of each unit of work" in Category (1) of Article 6(a) shall be construed to mean, for the purposes of this contract: "the average cost per foot of drilling."

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

(e) ARTICLE 13. *Changes and added provisions.*—

In Article 6(c), the words "Article 9" are changed to "Article 8."

(a) In article 3, the words following the reference to Article 10 are deleted and the following words are substituted: "shall have expired the work."

(b) In stage I, categories (3) through (6) of Article 6(a) are deleted.

(d) In stage II and stage III, all costs set forth in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project and are in lieu of the actual costs that otherwise would be allowable under stage II and stage III of the Contract. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.

(c) In Article 6(a), that part of the last sentence in the first paragraph beginning after the semi-colon, is deleted.

~~(e) In Category (1) of Article~~

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....
Administrator, Defense Minerals Exploration Administration

.....**COSO URANIUM, INC.**.....
(Operator)

By .....

Title.....

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—70617-1

The work shall be divided into three stages. The Operator shall perform all the Stage I work and so much of the other stages as is approved in advance in writing by the Government.

Stage I

Stage I shall consist of drilling not in excess of nine (9) churn drill holes at the approximate locations shown on the map entitled "Figure 2, Coso Uranium Property ...," as follows:

1. One hole at intersection of coordinates N 47180, E 44840;

2. Five holes, the first hole at intersection of coordinates N 47040, E 44650, and the other four holes at intervals of approximately 150 feet on a bearing of S 15° W. from the first hole in this Item 2; and

3. Three holes, the first hole at intersection of coordinates N 46750, E 44650, and the other two holes at intervals of 150 feet on a due east bearing from the first hole in this Item 3. E 44720,

Not in excess of 120 samples shall be chemically analyzed for their U_3O_8 content under this Stage I of the Contract.

It is estimated that 1,850 feet of drilling will be required to complete the nine (9) holes. If more than 1,850 feet of drilling is required, additional footage may be drilled to complete the holes upon transferring to this work part of the funds provided for raising (Item 5, Stage III) and correspondingly reducing the funds available for work under said Item 5, Stage III.

Stage II

The approximate location of Stage II work is shown on map Figure 2. The work shall be divided into three parts as follows:

Item 1.- In Area 8, extend the existing 65-foot inclined shaft by sinking approximately 50 feet to reach the floor contact of the Coso lake beds and the underlying granite formation. If more than 50 feet of shaft sinking is required to reach the contact, additional footage may be sunk upon transferring to this work part of the funds provided for in Item 5, Stage III and correspondingly reducing the funds available for work under said Item 5, Stage III.

Not in excess of 10 samples from the drift or drifts (Item 4) and 20 samples from the raise (Item 5) shall be chemically analyzed for their U_3O_8 content under this Stage III of the Contract.

Estimated Costs of Project

Actual Costs

Stage I

Category (1) Independent Contracts

Churn drilling, 1,850 feet @ $5.00/ft. 1/	$9,250.00	
Category (2) Personal Services		
Subcategory (a) Supervision		
1 Supervisor, 2 months @ $600.00/mo.	1,200.00	
Categories (3), (4), (5), and (6)	None	
Category (7) Miscellaneous - None except		
Payroll tax and insurance on supervisor's salary @ 7%	84.00	
Chemical analyses for U_3O_8 content of 120 samples @ $3.50/sample	420.00	$10,954.00

Stage II

Category (1) Independent Contracts

Item 1 - shaft sinking in Area 8: 50 feet of incline shaft @ $36.00/ft.	$1,800.00	
Item 2 - crosscutting in Area 2: 200 feet of crosscut @ $20.00/ft.	4,000.00	
Item 3 - drift from bottom of shaft (Item 1, Area 8): 200 feet of drift @ $25.00/ft.	5,000.00	
Category (2) Personal Services		
Subcategory (a) Supervision		
1 Supervisor, 3 months @ $600.00/mo.	1,800.00	

Categories (3), (4), (5), and (6) None

Category (7) Miscellaneous - None except

Payroll tax and insurance on supervisor's salary @ 12%	$ 216.00	
Chemical analyses for U_3O_8 content of 46 samples @ $3.50/sample	161.00	$12,977.00

Stage III

Category (1) Independent Contracts

Item 4 - drifts from crosscut (Item 2, Area 2): 100 feet of drifts @ $20.00/ft.	$ 2,000.00	
Item 5 - raise from south end of drift (Item 3, Area 8): 150 feet of raise @ $25.00/ft.	3,750.00	

Category (2) Personal Services

Subcategory (a) Supervision

1 Supervisor, 2 months @ $600.00/mo.	1,200.00	

Categories (3), (4), (5), and (6) None

Category (7) Miscellaneous - None except

Payroll tax and insurance on supervisor's salary @ 12%	144.00	
Chemical analyses for U_3O_8 content of 30 samples @ $3.50/sample	105.00	$ 7,199.00

SUMMARY

Estimated Total Cost Stage I	$10,954.00	
Estimated Total Cost Stage II	12,977.00	
Estimated Total Cost Stage III	7,199.00	
Estimated Total Cost of Project		$31,130.00
Government Participation @ 75% (rounded)		$23,348.00

1/ Represents average cost per foot.

DRAFT
FMMurphy/ai
7-26,-1956

MF-200
(Revised June 1954)

Docket No. DMEA 4191

Commodity Uranium

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Coso Uranium, Inc. a California corporation, whose mailing address is 2485 American Ave., Long Beach 6, California, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and .....

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of California, County of Inyo, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Owner of [5] the entire interest in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: None

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before July 1, 1957 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall either have completed the work or shall have incurred allowable costs (see Article 6) in a sum not less than the estimated total allowable cost set forth in Exhibit "A."

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $~~31,130.00~~ 30,725.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $~~23,348.00~~ 23,044.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated, total allowable cost of the work.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9.

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *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 a sufficient final report and final account (see Article 7) has been rendered, 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, within 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 crude 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 therof 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 (1½) 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 (½)

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 (1½) percent; on an amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *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.

(h) *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.

(i) *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 production operations.

(j) *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.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....

.....
(Operator)

By .....

.....

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—70617-1

DRAFT
FMMurphy/ai
7-26-56

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INCORPORATED
DOCKET NO. DMEA-4191

ANNEX I

The land referred to in Article 2 of the contract consists of twenty three (23) contiguous unpatented lode mining claims recorded in the Office of the County Recorder, Inyo County, California, as follows:

Claim	Original Recording Book	Original Recording Page	Amended Recording of May 3, 1955 Book	Amended Recording of May 3, 1955 Page
White Swan No. 1	69	538	72	3
White Swan No. 2	69	539	72	4
White Swan No. 3	69	540	72	5
White Swan No. 4	69	541	72	6
White Swan No. 5	69	663	72	161
White Swan No. 6	69	665	72	163
White Swan No. 7	69	667	72	165
White Swan No. 9	69	671	72	158
White Swan No. 10	69	672	72	159
Linda Sue No. 1	69	543	72	7
Linda Sue No. 2	69	545	72	9
Linda Sue No. 3	69	547	72	11
Linda Sue No. 4	69	549	72	13
Linda Sue No. 5	69	551	72	15
Helen Faith No. 1	69	593	72	27
Helen Faith No. 2	69	595	72	29
Helen Faith No. 3	69	597	72	31
Helen Faith No. 4	69	599	72	33
Helen Faith No. 5	69	601	72	35
Esther No. 1	69	605	72	17
Esther No. 2	69	607	72	19
Esther No. 4	69	611	72	23
Esther No. 5	69	613	72	25

The claims are situated in secs. 24 and 25, T. 20 S., R. 37 E., and in secs. 24 and 25, T. 20 S., R. 37-½ E., M.D.B. & M., Inyo County,

California. The approximate locations of the claims, excepting Helen Faith Nos. 4 and 5, are shown on the map entitled "Claim Map, Coso Uranium Property, Inyo County, California - Figure 5," attached hereto and made part hereof.

DRAFT
FMMurphy/ai
7-26-56

EXPLORATION PROJECT CONTRACT
COSO URANIUM, INCORPORATED
DOCKET NO. DMEA-4191

EXHIBIT "A"

Description of the Work

General Provisions:

The object of the project is to explore for uranium ore deposits in the Coso lake beds of Pliocene - Pleistocene age. The work shall consist of churn drilling, shaft sinking, drifting, crosscutting, and raising.

A competent supervisor shall be employed full time to assit in the performance of the work under the contract.

During the churn drilling, the material penetrated shall be extracted and tested radiometrically after each two-foot drive. If the material tested shows significant radioactivity, it shall be split for sampling purposes. The Operator shall have one-half of each such sample chemically analyzed for its U_3O_8 content, and store the other half, properly identified as to drill hole number and depth represented, for Government use.

The holes shall be drilled, using not less than standard 6 inch casing, through the Coso lake sediments and approximately one foot into the underlying granite.

The shaft, drifts, crosscuts, and raise shall be adequately timbered and shall conform to the Mining Laws of California in regard to safety and ventilation.

The walls, back, floor, and face of each new advance in the shaft, crosscuts, drifts, and raise shall be tested radiometrically. Sections of these openings that show significant radioactivity shall be sampled at intervals of not less than 5 feet. The samples shall be split. The Operator shall have one-half of the sample chemically analyzed for its U_3O_8 content and store the remainder, properly identified, for Government use.

Copies of all assay certificates shall be submitted with the Monthly Progress Report (see Article 7).

The locations, extent, and method of performing the work under this contract are subject to Government approval.

The work shall be divided into three stages. The Operator shall perform all the work under Stage I and so much of the other stages as is approved in advance in writing by the Government.

Stage I

Stage I shall consist of drilling not in excess of nine (9) churn drill holes at the approximate locations shown on map entitled "Figure 2, Coso Uranium Property...," as follows:

1. One hole at intersection of coordinates N 47180; E 44340;
2. Five holes, the first hole at intersection of coordinates N 47040; E 44650, and the others at intervals of approximately 150 feet on a bearing of S 15° W. from the first hole;
3. Three holes, the first hole at intersection of coordinates N 46750; E ~~44650~~ 44720, and the others at intervals of 150 feet on a due east bearing from the first hole.

Not in excess of 120 samples shall be chemically analyzed for their U_3O_8 content under this Stage I of the contract.

It is estimated that 1,850 feet of drilling will be required to complete the nine (9) holes, however, if the footage estimated is not sufficient, a part of the funds provided for raising (Item 5, Stage III) may be used with a corresponding reduction of work under this item.

Stage II

The approximate location of Stage II work is shown on map Figure 2. The work shall be divided into three parts as follows:

Item 1 - In Area 8, sink an estimated additional 50 feet in the existing 65-foot inclined shaft to reach the floor contact of the Coso lake beds and the underlying granite formation. If the estimated footage is not sufficient to reach the contact, a part of the funds provided for in Item 5 Stage III may be used, with a corresponding reduction of the extent of work under this item.

The shaft shall have one skip and one manway compartment and shall not be less than 4'6" x 7'6" in cross section clear of the timber (including the width of the dividing timber between the compartments).

Item 2 - In Area 2, starting at the intersection of coordinates N 46900, E 45070 drive a crosscut, not to exceed 200 feet in length, in a due east direction following as close as practical the Coso lake bed-granite contact.

The crosscut shall not be less than 5' x 7' in cross section clear of the timber.

Item 3 - In Area 8, starting from the shaft (Item 1) drive a drift, not to exceed 200 feet in length, in a southerly direction following as close as practical the Coso lake bed-granite contact.

The drift shall not be less than 5' x 7' in cross section clear of the timber.

Not in excess of 6 samples from the shaft (Item 1), nor more than 20 samples each from the crosscut (Item 2) and the drft (Item 3), shall be chemically analyzed for their U_3O_8 content under this Stage II of the contract.

Stage III

The approximate location of Stage III work is shown on map Figure 2. The work shall be divided into two parts as follows:

Item 4 - In Area 2, drive not in excess of 100 feet of drifts in either or both a north-south direction, to further explore mineralized zones encountered by the crosscut Item 2.

The drift or drifts shall not be less than 5' x 7' in cross section clear of the timber.

Item 5 - In Area 8, at the south end of drift Item 3, drive a vertical raise not to exceed 150 feet in length, to explore the upper horizons of the Coso lake beds.

The raise shall have a chute and a manway compartment and be not less than 4'6" x 7'6" in cross section (including the width of the timber between compartments).

Not in excess of 10 samples from the drift or drifts (Item 4) and 20 samples from the raise (Item 5) shall be chemically analyzed for their U_3O_8 content under this Stage III of the contract.

Estimated Costs of Project

Actual Costs

Stage I

Category (1) Independent Contracts

Churn drilling, 1,850 feet @ $5/ft.[1] $9,250.00

Category (2) Supervision

One supervisor, 2 months @ ~~$500~~ $600/mth. 1,200.00

Categories (3), (4), (5), and (6) - None .....

Category (7) Miscellaneous - None except:

See rewrite attached

Payroll tax and insurance on supervisors salary @ 7% 84.00

Chemical analyses for U_3O_8 content of 120 samples @ $3.50/sample 420.00

TOTAL $10,954.00

[1] Represents average cost per foot.

Stage II

Category (1) Independent Contracts

Item 1 - shaft sinking in Area 8:
50 ft. of incline shaft @ $36/ft. $1,800.00

Item 2 - crosscutting in Area 2:
200 ft. of crosscut @ $20/ft. 4,000.00

Item 3 - drift from bottom of shaft (Item 1, Area 8):
200 ft. of drift @ $25/ft. 5,000.00

Category (2)

One supervisor, 3 mths. @ $600/mth. 1,800.00

Categories (3), (4), (5), and (6) - None

Category (7) Miscellaneous, none except:

Payroll tax and insurance on supervisors salary @ 12% 216.00

Chemical analyses for U_3O_8 content of 46 samples @ $3.50/sample 161.00

TOTAL $12,977.00

Stage III

Category (1) Independent Contracts

Item 4 - drifts from crosscut (Item 2, Area 2):
100 ft. of drifts @ $20.00/ft. $2,000.00

Item 5 - raise from south end of drift (Item 3, Area 8):
150 ft. of raise @ $25.00/ft. 3,750.00

Category (2) Supervision

One supervisor, 2 mths. @ $600/mth. 1,200.00

Categories (3), (4), (5), and (6) - None

Category (7) Miscellaneous, none except:

Payroll tax and insurance on supervisors salary @ 12% 144.00

Chemical analyses for U_3O_8 content of 30 samples @ $3.50/sample 105.00

TOTAL $7,199.00

S U M M A R Y

Total Estimated Cost Stage I	$10,954.00
Total Estimated Cost Stage II	$12,977.00
Total Estimated Cost Stage III	$ 7,199.00
Total Estimated Cost of Project	$31,130.00
Government Participation @ 75% (rounded)	$23,348.00

7-26-56

IN REPLY REFER TO:

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

July 25, 1956

Memorandum

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

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

Subject: Review of field examination report, DMEA 4191, Coso Uranium, Inc., White Swan claims, Inyo County, California

The examining team concludes that sedimentary lake beds derived in part from weathered granite on the property might contain significant reserves of low grade uranium ore. They, accordingly, recommend approval of DMEA participation in exploration work on certain parts of the property where geologic conditions are considered best.

Past mining and sampling indicates that the grade of the material on the property is apt to be low--probably too low to meet present market conditions. The examiners, however, make a significant point when they direct attention to the probable deposition of secondary uranium by circulating ground water and the strong possibility that grade will increase in lower places in the granite embayment.

I agree with the examining team's contention that more exploration on the property is justified. The exploration plan outlined by the examining team seems feasible. I do not, however, believe that the applicant should be allowed to commence underground work until the churn drilling in Stage I is completed--no matter how difficult the drilling may be. Careful and constant supervision of competent drillers will be necessary to make the drilling successful.

W. P. Williams

W. P. Williams

RECEIVED
JUL 26 1956

7/26/56

RECEIVED

JUL 26 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D. C.

1605 Evans Avenue
Reno, Nevada

July 24, 1956

Memorandum

To: Operating Committee, DMEA, Interior Building
Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al groups
Inyo County, California

Will you please make the following correction to our application report dated July 18, 1956 on subject property:

Second line from bottom, page 12, coordinate E 45150 should be changed to read E 44600.

S. Ricker

7/23/56

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

1605 Evans Avenue
Reno, Nevada

July 18, 1956

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4191 (Uranium)
Coso Uranium, Inc.
White Swan, et al, groups
Inyo County, California
(Pursuant to your letter of March 13, 1956)

Attached are four copies of a report by B. H. Sheahan, Bureau of Mines and D. B. Tatlock, Geological Survey in which a DMEA exploration project at a cost of $23,836.12 is recommended.

Roscoe Smith and I concur in the recommendation.

S. Ricker

Attach.

SRicker:gh
cc: R. M. Smith (2) w/reports (2)
File

Reviewed by
DMEA OPERATING COMMITTEE
7-25-56
(date)

ON-SITE EXAM.

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

DMEA-4191 (Uranium) Ceso Uranium, Inc.
White Swan, et al groups
Inyo County, California

by

B. H. Sheahan
Walter Bank
U. S. Bureau of Mines

D. B. Tatlock
U. S. Geological Survey

July 18, 1956

Revised by
DMEA Operations Manual
7-25-56
(date)

CONTENTS

	Page
Introduction	1
Conclusions and Recommendations	3
Location, Accessibility, and Local Facilities	4
History and Production	5
Property and Ownership	7
Development	8
General Geology	9
Ore Deposits	12
Sampling	15
Ore Reserves	18
Proposed Exploration	19
Exploration Costs	22
Unit cost and operating cost summary	25

* * * * *

ILLUSTRATIONS

Figure	Description
1	Location map, Coso Uranium Inc., White Swan, et al groups, Inyo County, California
2	Geologic map
3	Assay map
4	Proposed work
5	Claim map

INTRODUCTION

Coso Uranium, Inc., 2485 American Avenue, Long Beach, California, applied for Government assistance in a $100,100.00 program under the Defense Minerals Exploration Administration, docket DMEA-4191, to explore for uranium at the White Swan, et al claims, Inyo County, California.

A field examination was requested by the Operating Committee and was made by B. H. Sheahan and Walter Bank, U. S. Bureau of Mines, and D. B. Tatlock, U. S. Geological Survey, on March 22-24, 1956, accompanied by the applicant's representatives: Walker S. Clute, consulting geologist; Walker S. Clute, Jr.; Conrad Housley, resident geologist; and Jack McCord, superintendent. The property was re-examined by B. H. Sheahan, U. S. Bureau of Mines, and R. M. Smith, U. S. Geological Survey, on May 38, 1956. Mr. W. Ormond Merritt, president, and Mr. Harry L. Lee, treasurer, conferred with the examiners on March 23, 1956, stating that the corporation would be willing to consider almost any exploration proposal that might be recommended.

Inasmuch as the surface geology and most of the underground workings have been adequately mapped by the company geologist and a consulting geologist, no attempt was made by the field examiners to remap the property except for some minor additions to the under-

ground workings. The applicant's maps were carefully studied and were compared with geologic exposures on the surface and in the underground workings. Areas where high radio-active count had been obtained were checked with a Geiger counter and ultra-violet light, and underground workings and surface pits were carefully sampled.

Uranium prospects adjoining the south end of the property were visited, and three samples were taken. Certain geologic features are well expressed in this southern area at the Ontario Prospect.

Mr. Ernest E. Thurlow, chief, Salt Lake Exploration Branch, Division of Raw Materials, AEC, furnished pertinent factual data and his general opinion concerning the Cose operations in a letter dated April 10, 1956 to Mr. S. Ricker, Executive Officer, DMEA, Region II. The examiners conferred with Mr. Harry E. Nelson, section chief, and Mr. D. C. Barrett, geologist, at the Las Vegas, Nevada, AEC office, and with Mr. Dudley Davis, assistant chief, Salt Lake Exploration Branch. All the AEC men believe that the property has some merit.

Radiometric and chemical analyses of samples taken by the examiners were made by the U. S. Bureau of Mines, Reno, Nevada.

CONCLUSIONS AND RECOMMENDATIONS

Primary uranium minerals are sparsely disseminated in the granite of the Coso range. Secondary uranium minerals, chiefly uranophane and autunite, derived from the weathering of the granite have been precipitated from circulating ground water and are disseminated in porous beds of the Coso lake sediments which lie along the lower west flank of the range.

The primary deposits are not of commercial size or grade although small selected specimens of commercial grade can be found. Secondary deposits of commercial size and grade are deposited on the weathered granite surface which is partly covered by lake sediments. The best secondary ore is inferred to be in channelways in the granite surface which have been buried under lake sediments. Reserves of this material in the mine area total about 100,000 tons which may average about 0.17 percent U_3O_8.

Secondary uranium minerals also occur in less concentration in porous layers of the lake sediments above the granite surface. In the mine area reserves of 110,000 tons of this material averaging 0.05 percent U_3O_8 are estimated.

Total resources along the west flank of the range are estimated to be a few million tons ranging in grade from 0.01 to 0.10 percent U_3O_8. The extent to which the lake sediments are mineralized

is not known but it is possible that several layers of the lake sediments are mineralized over an area several hundred feet wide and two miles or more long.

Because of the possibility of a significant amount of secondary minerals of ore grade and of the large tonnage of lower grade, it is recommended that the Government participate in exploring the property.

The proposed exploration consists of 1,850 feet of churn drilling, 50 feet of shaft, and 650 feet of underground work in three stages at a total cost of $31,781.50, of which the Government's share would be $23,836.12. Time for completion of the work would require one year.

LOCATION, ACCESSIBILITY, AND LOCAL FACILITIES

The Cose Uranium Inc. claims are on the west slope of the Cose range in secs. 24 and 25, T. 20 S., R. 37 E., and in secs. 24 and 25, T. 20 S., R. 37-1/2 E., M.D.B.&M., Inyo County, California (fig. 1).

The property is accessible all year with a passenger car. To reach the mine office from Lone Pine, Calif., the nearest city, travel south 25 miles on U. S. Highway 395, turn left on a paved road leading toward Cactus Flat and go 1.4 miles to the end of pavement, continue 9.3 miles on sandy desert road which is posted to the

mine office. The total distance from Lone Pine is 35.7 miles.

The nearest railroad siding is 11.5 miles, and the nearest source of water is 10.5 miles in the vicinity of Olancha, California. There are no housing facilities at the mine; consequently, the workmen reside either at Olancha or Lone Pine.

Wage scale for miners -- Darwin-Lone Pine:	$2.00/hr.
Supplies:	Available at Lone Pine.
Timber:	$100-$135/M.
Explosives:	$21.70/Cwt.
Electric power:	Not available at the mine.
Truck haulage to Southern Pacific Railroad siding:	$2.25/T.
Railroad freight to Salt Lake City, Utah:	$9.00-$12.00/T.

HISTORY AND PRODUCTION

The mineral showings of the Coso uranium claims were discovered December 11, 1954 by Ed Dodge of Olancha, Wm. I. Brainard of Lone Pine, and Jack Burkhardt of Lone Pine, while searching for bentonite deposits. These men were joined by Fay Cooper and Harry Rindhal of Los Angeles, who were employees of W. Ormand Merritt. Mr. Merritt then joined the group, and all six men are named as locators.

Six carloads of ore mined from locations 2, 5, 8A, and 8B were shipped to Vitro Chemical Company in Salt Lake City, Utah December 20-24, 1955. Settlement sheets are not available, but an oral report by Mr. Merritt, supplemented by information supplied by Mr. McCord, follows:

Lot	SP Car No.	%, U_3O_8	Remarks
1	152630	0.13	1/2 from location 2, 1/2 from location 8.
2	90345	0.11	1/2 from location 2, 1/2 from location 8.
3	151917	0.05	Location 8.
4	152478	0.05	Location 8.
5	56611	0.04	Location 8.
6	84580	0.11	1/2 from location 5, 1/2 from location 8.

The shipments represented run-of-the-mine rock, according to Mr. McCord. Mr. Merritt states that, in his opinion, a significant quantity of fines carrying the values was lost during the shipment in open gondolas, thus accounting for the low U_3O_8 percentages in lots 3, 4, and 5. However, sample assays indicate that ore remaining and being mined in locations 5 and 8 is comparable in grade with the ore shipped from these locations.

PROPERTY AND OWNERSHIP

The property includes 26 unpatented mining claims (less three claims subsequently relinquished to avoid litigation). The locators have assigned the claims to the corporation, receiving stock in payment. A list of the claims held by the corporation, and recorded at Independence, California, follows:

White Swan, Nos. 1 to 10-----	Book 69,	Pages	538-672
Linda Sue, Nos. 1 to 5-------	" 69,	"	543-551
Helen Faith, Nos. 1 to 6-----	" 69,	"	593-603
Esther, Nos. 1 to 5---------	" 69,	"	605-613

A second recording was made May 3, 1955 in Book 72, pages 3 to 161. The three claims relinquished are the White Swan No. 8, Helen Faith No. 6, and Esther No. 3. The claims were staked by the locators but are not surveyed.

Mr. W. Ormond Merritt, president, and most of the other officers of the corporation lack mining experience. Consultants retained by the corporation range from mine promotors to a professor of economic geology. Competency of the operating personnel is fair but supervision is poor.

The applicant is financially able to provide its share of an exploration loan with money.

DEVELOPMENT

The property is developed by eight adits from 10 to 75 feet in length, and by a 65-foot inclined shaft. Very little timber has been used for ground support, but would be necessary if extensive mining were done in the Coso formation, or along the irregular contact between this bedded formation and the granite.

Exploration, development, and mining costs were not given but total expenditures were $60,000, according to the applicant. The superintendent, Mr. Jack McCord, estimated that a three-man crew could drive 5 feet of 5-foot by 7-foot drift per shift or sink a one and one-half compartment shaft 3 to 4 feet per shift.

An attempt to upgrade the ore by screening was not successful as indicated by sample analyses.

A list of surface facilities and equipment follows:

	Condition
(a) House trailer, used as office	good
(b) Vehicles:	
1 - 5-ton dump truck	"
1 - Jeep station wagon, 6-cyl.	"
1 - Station wagon	fair
1 - Power wagon, 2-ton truck-dump bed	good
1 - Skiploader-tractor, 1/4 yd.	new
(c) Drills - 2 jackhammers, 1 stoper, and 1 jackleg (rented)	fair
(d) Air compressors, 1 - 115 cfm, 1 - 210 cfm.	rental purchase
(e) Welding unit, electric (rented)	fair
(f) Mine car, 16 cf., 500' - 12lb. rail	"
(g) Tugger hoist, double drum; air	"
(h) Water storage tanks: 250, 550, and 4200 gal. capacity	"

(i) Office and laboratory equipment: Hoffman scaler, Geiger counters, ultra-violet lamp, drafting instruments, stereoscope.

(j) Vibratory screen - 16 mesh.

The company has only partial cost data regarding exploration, development, and mining. Cost estimates on 300 tons recently produced follow:

Item	Estimated cost per ton
Mining(labor and supplies)	$10.00
Truck haulage to railroad	2.25
Railroad freight to Vitro Chemical Co.	9.00
Total cost (exclusive of exploration, development, or upgrading)	$21.25

One exploratory hole was diamond drilled to a depth of 80 feet near location 5, but no core was recovered.

GENERAL GEOLOGY

The Case uranium claims are underlain by clastic lake bed sediments and younger porphyritic andesite flows that were deposited on a highly irregular, jointed, and faulted granite surface inclined to the west.

The granite is chiefly coarse-grained alaskite of Cretaceous age that has been intruded by dikes of biotite granite as much as 50 feet wide. Two sets of joints are prominent in the granite. One set strikes north-northeast and dips steeply east; the other strikes west-

northwest and dips steeply south. The biotite granite dikes are, in general, parallel with the west-northwest joints. The joints seem to have controlled the erosional irregularities in the old granite surface.

The overlying Coso lake beds of Plio-Pleistocene age dip generally 10 to 20 degrees west and are composed chiefly of very poorly consolidated granitic debris which ranges in size from boulders as much as 4 feet in diameter to shale-size particles, and in color from brown to white. Some volcanic ash is interbedded high in the Coso section. Lake beds range from a fraction of an inch to several feet in thickness; graded bedding and crossbedding are common. The beds are finer grained and more distinctly bedded and homogeneous away from the old shore line and higher in the section. Locally along the old shore line it is difficult to pick the contact between poorly bedded near shore facies of lake bed material and weathered granite.

Colluvium occurs intermittently above the eastern margin of the lake beds and probably ranges in age from at least Pliocene to Recent. It contains angular blocks of granite ranging from a few inches to as much as 10 feet across in a matrix of silt, sand, and pebbles. Most of it is firmly cemented and is stained with iron and manganese oxides.

Porphyritic andesite flows of Pleistocene age overly the Coso beds north of and west of the mine area. The andesite immediately west of the mine covers a collapsed volcanic vent about 1,600 feet in diameter into which immediately adjacent lake beds and granite have slumped (fig. 2 -- N 47700, E 43300). Extending south-southwest from the collapsed vent is a distinct monoclinal flexure (N 45500, E 43200) along which the lake beds dip from 35 to 45 degrees west in contrast to the regional dip of 10 to 20 degrees west.

The Coso lake beds in the central mine area are in an embayment in the old granite surface (fig. 2 -- N 46600, E 45000), hereinafter referred to as the Coso embayment. All of the known uranium deposits on the Coso property are in, or around the flanks of, this embayment. Similar deposits along the granite ridge are on adjacent properties. The lake beds are bordered on the north, east, and south by granite and on the west by the collapsed volcanic vent. A normal fault that dips about 50° east trends north-northeasterly along the eastern margin of the collapsed area; the dip slip on this fault is from 10 to 20 feet, as seen in the lake beds. Smaller echelon faults are present at location 5 near the north end of the embayment (fig. 2 -- N 47400, E 45000). The Pinto Pass fault (fig. 2 -- N 48700, E 45900) may extend south along the eastern margin of the embayment.

Within the embayment, beds low in the Coso section were probably deposited in channelways between granite knobs on the irregular pre-Coso erosion surface. The maximum thickness of the Coso section within the embayment is estimated to be 200 feet.

ORE DEPOSITS

Secondary uranium minerals, chiefly uranophane and autunite, are disseminated in permeable lake beds and in weathered granite, around the flanks of the Coso embayment, in three stratigraphic positions: (1) in the weathered granite beneath the pre-Coso erosion surface, (2) in the basal Coso beds at the granite contact, and (3) in coarse-grained, porous beds higher in the Coso section.

The ore minerals are uranophane, autunite, and uranopillite (?). Gangue minerals are iron oxides, some manganese oxides and opal, and locally white to black chalcedonic quartz and minor pyrite.

The secondary minerals are believed to have been deposited from ground water solutions that derived uranium from a primary hard black radioactive material in the granite. This material is probably composed of extremely fine-grained pyrite and quartz and colloidal uraniferous material. It occurs locally in the unweathered and only slightly weathered granite (fig. 2 -- Location 1, N 48900, E ~~45150~~ 44600) as fracture fillings up to 1/8 inch thick. It also fills microscopic fractures in the quartz and feldspar grains in the granite and

occurs along grain boundaries. No minable deposits occur in the unweathered granite. About 2 miles south of the Coso property similar appearing black uraniferous material impregnates lake bed sediments for as much as 50 feet away from the granite contact along a steeply-dipping, east-trending fault which cuts both granite and lake beds.

Significantly anomalous radioactivity has been recorded at eleven locations on the Coso uranium property; deposits have been mined at three of these locations: 2 (N 47100, E 45300), 5 (N 47400, E 45000), and 8 (N 47100, E 44500). In the open cut at location 2 work was discontinued after shipping 75 tons of selected ore that assayed about 0.19 percent U_3O_8. Uranium minerals are said to have been disseminated in decomposed biotite granite. Some fragments of biotite granite were seen in the slope debris, but none in place. Some uranophane and autunite occur as coatings on relatively unweathered alaskite in place.

At location 5 ore is disseminated interstitially in the basal lake beds immediately above the granite. The unconformity here is very irregular. The most highly mineralized zone is along a south-plunging channelway between buried granite knobs. The channeling is parallel with a zone of minor enecheion faults which strike north-northeast and dip steeply east and cut both the granite and the lake beds. All of the uranium-bearing beds are stained

dark brown with iron oxides. Locally traces of uranophane are disseminated interstitially in the upper 1 to 4 inches of the weathered granite at the unconformity.

As the ore, exposed at the granite-Coso contact at locations 2 and 5, is relatively high on the flanks of the Coso embayment, and assuming the uranium minerals were precipitated from ground-water solutions, it is possible that along channelways, or in depressions, on the floor of the embayment, the grade and thickness of ore will be greater.

At location 8 the uranium-bearing beds are about 60 feet above the unconformity on the hanging-wall side of a north-northeast trending fault which dips about 50° east. The beds dip from 10 to 20 degrees west into the fault. The mineralized zone is a series of beds totaling about 6 feet in thickness containing interstitial autunite; some cross bedding can be seen. The top and bottom beds in the zone, each ranging from 1 to 2 feet thick, are composed chiefly of granule size particles and are more mineralized than the finer-grained beds between. Above and below the 6-foot zone the beds are very sparsely mineralized. Locally there are irregular diffusion patterns of iron oxides outlining enriched zones; some of these cut across into adjoining beds as much as 2 feet. Autunite occurs along the fault zone, as exposed in the shaft, as interstitial disseminations in the lake beds and as coatings on fractures in weathered granite.

Other beds in the Coso section similar to those at location 8 may be of ore grade, or almost ore grade, over small areas.

SAMPLING

The grade of the ore is best indicated by the returns from the carloads shipped, although even these are not entirely representative. The best ore was selectively mined from locations 5 and 2, and was mixed with the low grade (0.05 percent U_3O_8) from location 8. Carload lots 1, 2 and 6 were 50-50 mixtures of ore from location 8 and locations 5 and 2 and averaged 0.11 to 0.13 percent U_3O_8. The calculated grade of ore mined from locations 5 and 2 is therefore 0.17 to 0.21 percent U_3O_8.

DMEA samples from areas 5 and 2 do not confirm these calculated grades because the best faces of higher grade material were mined. From lamping the deposit, it appears that the ore along the granite surface (locations 5 and 2) averaged about 0.2 percent U_3O_8 and the ore in the lake beds (location 8) will average 0.05 percent U_3O_8.

Thirty three samples were collected by the examining engineer and are described as follows:

Sample No.	Width, ft.	%, eU_3O_8	%, cU_3O_8	Remarks
S-443	5.0	0.02	0.05	Pit No. 1, west side.
S-444	1.5	0.01		No. 8B, Coso lake bed arkose.
S-445	2.0	0.01	0.05	No. 8B, in granite, bottom of shaft.

Sample No.	Width, ft.	%, eU_3O_8	%, cU_3O_8	Remarks
S-446	grab	0.02		Boulders 7B, conglomerates/breccia.
S-447	1.0	0.04		Pocket, 7A, back (1/2-ton ?)
S-448	selected	0.07	0.06	Pit No. 2, appears typical of high-grade left.
S-449	3.5	0.02	0.03	No. 5, high-count area.
S-450	5.0	0.01		No. 5, across drift from above.
S-451	4.0	0.01		No. 5, east side.
S-452	2.0	0.05	0.06	No. 5, opposite and SW of S-449.
S-453	5.0	0.02		No. 5.
S-454	1.5	0.01		No. 5, lower 1-1/2 ft. of altered granite.
S-455	2.0	trace		No. 8B, 8 ft. above bottom of shaft, south side.
S-456	5.0	0.02	0.04	No. 8B, 14 ft. below collar, in Coso bed material.
S-457	4.5	0.05		No. 8A, 15 ft. in, south side, vertical cut.
S-458	4.0	0.03		No. 8A, 35 ft. in, south side, vertical cut.
S-459	6.5	0.03		No. 8A, 55 ft. in, south side, vertical cut.

Sample No.	Width, ft.	$\%eU_3O_8$	$\%cU_3O_8$	Remarks
S-460	6.5	0.03		No. 8A, 75 ft. in, face.
S-461	7.0	0.05	0.16	No. 8A, 60 ft. from face of SE drift, vertical cut.
S-462	6.0	0.04		No. 8A, 40 ft. from face, of SE drift.
S-463	5.3	0.04		No. 8A, 20 ft. from face of SE drift.
S-464	4.5	0.04		No. 8A, face SE drift.
S-465	4.0	0.04		No. 8A, NE drift, north side, vertical cut.
S-466	5.0	0.08	0.08	No. 10, near portal, yellow minerals showing.
S-467	2.0	0.02		No. 10, face, vertical cut.
S-468	8.0	0.09	0.11	Ontario prospect, west adit (adjoining property).
S-469	selected	trace		Dark rock, collected by Tatlock (USGS).
S-470	selected	0.08	0.13	South Ontario, glass (?)
S-471	pipe	0.03		Coarse sand stockpile, 2-1/2 tons +16 mesh.
S-472	pipe	0.07	0.14	Sand, -16 mesh, stockpile, 7-1/2 tons.
S-491	1.7	0.05	0.06	Autunite-bearing sand from new workings at location 8A. Vertical cut 3 ft. above bottom of drift, and 10 ft. back of face.

Sample No.	Width, ft.	%, eU_3O_8	%, cU_3O_8	Remarks
S-492	selected	0.43	0.32	Black mineral along seam and in a veinlet 1/16" thick and 6" in length in granite. Locally called impure pitchblende. Location 1.
S-493	selected	trace	0.02	Fresh granite from outcrop near mine office. Uranium inferred to be primary.

ORE RESERVES

There are no reserves of ore grade. Reserves of less than ore grade within the Coso embayment are:

Class	Tons	%, U_3O_8
Measured	2,250	0.05
Indicated	6,750	0.05
Inferred	100,000)	0.05
	100,000)	0.17

Measured reserves at location 8 (fig. 3) total 2,250 tons averaging 0.05 percent U_3O_8 in a block 100 feet along the strike, 75 feet along the dip, and 6 feet thick.

Indicated reserves at location 8 total 6,750 tons averaging 0.05 percent U_3O_8 in a block 200 feet along the strike, 150 feet along the dip, and 6 feet thick.

Inferred reserves at location 8 total about 100,000 tons averaging 0.05 percent U_3O_8 in a block 800 feet along the strike, 450 feet along the dip, and 6 feet thick.

It is also inferred that lake beds and weathered granite are mineralized in broad channelways, separated by granite knobs, on the granite-Coso contact, and that the channelways cover about one-third of the floor of the Coso embayment. Therefore, inferred reserves totaling about 100,000 tons averaging 0.17 percent U_3O_8 have been calculated as one-third of the tonnage contained in a circular area 1,200 feet in diameter and 5 feet thick. A tonnage-volume factor of 20 was used in the calculations.

Uranium resources on the Coso lake beds and along the granite-Coso contact in an area extending about 2 miles south of the Coso uranium property may total as much as a few million tons ranging in grade from 0.01 to 0.05 percent U_3O_8, and a few hundred thousand tons ranging in grade from 0.05 to 0.10 percent U_3O_8.

PROPOSED EXPLORATION

The applicant proposed to explore for primary uranium ore in granite by 52 drill holes totaling 14,300 feet at a total cost of $100,100.00.

Although the granite contains a hard, black uranium-bearing material, which is probably primary, there are no indications that minable ore bodies can be expected at depth in the granite on the Coso property. It is recommended, however, that the Government participate in a program to explore for secondary uranium ore that is inferred in chan-

ndways and depressions on the granite-Coso contact and in favorable beds higher in the Coso section.

The applicant's proposal would very effectively outline the topography of the granite surface but the results of core drilling are unpredictable. The Coso beds are very poorly consolidated and extremely porous and drill holes are likely to cave. It may not be possible to drill them successfully by any method, but churn drilling is the most likely to be successful. The applicant's costs are high and the drilling project is too large. A more effective program would be to test the granite surface with a few churn drill holes and then explore the best showings by underground exploration. The churn drill holes may also reveal the number of beds that have been mineralized even though precise sampling may be impossible.

A three-stage program is suggested in which the first stage will be churn drilling, the second sinking and crosscutting, and the third drifting and raising. Information gained from the first stage will be used to guide the work in stage two, and stage three will be contingent upon the findings of stages one and two. If, however, drilling is found to be impossible or impractical after the first few holes are drilled, then the program should enter into stage two directly and all of the work done by underground methods.

Stage I -- Nine churn drill holes totaling 1,850 feet to explore for ore on the granite-Coso contact and in beds higher in the Coso section.

Item 1 - At N47180; E44840 churn drill about 150 feet.

Item 2 - From N47040; E44650 along a bearing of S 15° W churn drill five holes 150 feet apart; each hole to be about 220 feet in depth.

Item 3 - From N46750; E44720 along a bearing of due east churn drill three holes 150 feet apart; each hole to be about 200 feet in depth.

Stage II -- 50 feet of shaft sinking and 200 feet of crosscutting.

Item 4 - At location 8, sink an additional 50 feet in the existing 65-foot inclined shaft to a total depth of 115 feet to reach the floor of the granite-Coso unconformity.

Item 5 - Crosscut from N46900; E45070 due east about 200 feet to explore for southern continuation of the ore body at location 2 on the granite-Coso unconformity.

Stage III -- 300 feet of drifting and 150 feet of raising.

Item 6 - Drift and/or raise from bottom of shaft 200 feet southerly along the granite-Coso unconformity to

determine the extent of ore.

Item 7 - Drift from end of crosscut (Item 5) 100 feet along granite-Coso unconformity to determine extent of ore.

Item 8 - Raise from south end of drift (Item 6) 150 feet vertically to explore for ore-bearing beds within the Coso section.

EXPLORATION COSTS

The applicant owns equipment valued at $12,500 which is sufficient to conduct the proposed underground work.

Stage I - Churn drilling, 9 holes total 1,850 feet - Time: 2 months

Independent contract, 1,850 feet @ $5.00/ft. including cost of 6" casing and water	$ 9,250.00	
Supervision and sampling - $500/mo.	1,000.00	
Assaying, 30 samples @ $5.00/ea.	150.00	
Total, Stage I, Items 1, 2, and 3		$10,400.00

Stage II - Item 4 - Shaft sinking, one compartment and manway (4'6" by 7'6" clear of timber) incline 50 feet @ $46.67/ft. Basis: 3-man crew and superintendent. Estimated rate of advance 3 feet/shift - Time: 3 weeks.

$ 2,333.50

	Cost per shift
Supervision	$24.00
Labor (3 @ $16.00)	48.00
Explosives	9.75
Pipe and track	6.25
Ventilation tube	6.00
Timber	31.00
Transportation, ins., assay	16.00
(3 feet)	$140.00
	27.00
	$111.00

Cost per foot $46.67

" " " $37.00

Supervision $36.00

(2)

Item 5 - Crosscutting from surface location (N46900; E45070). Size 5' by 7', clear of timber - 200 feet @ $25.90/ft. $ 5,180.00

Basis: 3-man crew and superintendent.
Estimated rate of advance 5 feet/shift.
Time: 40 shifts - 2 months

	Cost per shift	
Supervision	$24.00	
Labor (3 @ $16.00)	48.00	
Explosives	10.25	
Pipe and track	6.25	
Timber	26.00	
Transportation, ins., assay	15.00	
(5 feet)	$129.50	(Cost per foot $25.90)

Stage III - 300 feet of drifting and 150 feet of raising.

Item 6 - Drift and/or raise from bottom of shaft 200 feet southerly along the granite-Ceso unconformity to determine the extent of ore. Size 5' by 7' clear of timber. 200 feet @ $32.57/ft. $ 6,514.00

Basis: 3-man crew and superintendent.
Estimated rate of advance 4 feet/shift.
Time 50 shifts - 2-1/2 months

	Cost per shift	
Supervision	$24.00	
Labor (3 @ $16.00)	48.00	
Explosives	10.00	
Pipe and track	5.00	
Ventilation tube	7.50	
Timber	20.80	
Transportation, ins., assay	15.00	
(4 feet)	$130.30	(Cost per foot $32.57)

Item 7 - Drifting from crosscut (Item 5)

Size 5' by 7' clear of timber.
100 feet @ $25.90/ft. $ 2,590.00

Basis: 3 man crew and superintendent.
Estimated rate of advance 5 feet/shift.
Time: 20 shifts.

Item 8 - Raising from south end of drift (Item 6)

Size (4'6" by 7'6") clear of timber, vertical
150 feet @ $31.76/ft. $ 4,764.00

Basis: 3-man crew and superintendent.
Estimated rate of advance 4 feet/shift.
Time: 37-1/2 shifts - 2 months.

	Cost per shift
Supervision	$24.00
Labor (3 @ $16.00)	48.00
Explosives	9.75
Pipe	2.00
Ventilation tube	7.50
Timber	20.80
Transportation, ins., assay	15.00
(4 feet)	$127.05

(Cost per foot $31.76)

29.00
98.05

24.51

use same figure per ft as ~~[illegible]~~ drift from shaft hoisting material

UNIT COST AND OPERATING COST SUMMARY

Stage	Item	Unit Cost	Independent Contract	Labor	Supervision	Explosives	Pipe & Track	Vent. Tube	Timber	Assaying	Transport Gas & Oil	Ins., Taxes	Total
I	1, 2, 3 - Churn drilling 1,850 feet	$5.00	$9,250.00	-	$1,600.00	-	-	-	-	$150.00	-	-	$10,400.00
II	4 - Shaft sinking (4'6" x 7'6") 50 feet	$46.67	-	$ 800.00	$ 400.00	$ 162.50	$104.00	$100.00	$ 516.00	25.00	$ 82.00	$ 144.00	$ 2,33[illegible]
	5 - Crosscutting (5' x 7') 200 feet	$25.90	-	$1,920.00	$ 960.00	$ 410.00	$250.00	-	$1,040.00	$100.00	$154.40	$ 345.60	$ 5,180.00
	6 - Drifting (5' x 7') 200 feet	$32.57	-	$2,400.00	$1,200.00	$ 500.00	$250.00	$375.00	$1,040.00	$100.00	$217.00	$ 432.00	$ 6,514.00
III	7 - Drifting (5' x 7') 100 feet	$25.90	-	$ 960.00	$ 480.00	$ 205.00	$125.00	-	$ 520.00	$ 50.00	$ 77.20	$ 172.80	$ 2,590.00
	8 - Raising 150 feet	$31.76	-	$1,800.00	$ 900.00	$ 365.60	$ 75.00	$281.20	$ 780.00	$ 75.00	$163.20	$ 324.00	$ 4,764.00
			$9,250.00	$7,880.00	$4,940.00	$1,643.10	$804.00	$756.20	$3,396.00	$500.00	$693.80	$1,418.40	$31,7[illegible]50

Applicants share 25% $ 7,945.38

Government share 75% $23,836.12

3 weeks' work from ?

2 months

2 1/2 months

(Hoisting rock)

1 month

2 months

Supervision stage II - 2 1/2 months @ $600/month =

III - 2 months @ 600/month

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

RECD
MAR 23 1956

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

1605 Evans Avenue
Reno, Nevada

March 21, 1956

Re: Docket DMEA-4172 (Uranium)
" " 4185 "
" " 4191 "

Dear Mr. Thurlow:

We would appreciate having any information which you can make available to us regarding the following uranium properties. Government exploration assistance through the Defense Minerals Exploration Administration has been requested and it was suggested by our Washington office that you may have pertinent data that would aid us in our field examinations.

Docket No.	Remarks
DMEA-4172	Holiday Mines, Inc., Mr. Edward Goldberg, Pres. Holiday and Falcon claims, located 18 miles east of Hawthorne, Nev. and 3 miles north of Highway 95, in the Fitting Mining Dist., Mineral County, Nevada.
DMEA-4185 (Uranium)	U.S. Pitchblende Corporation, Dr. G. C. Ridland, Geol. Engr. Broken Ridge and Carnotite No. 1 claims. Located in the Old St. Thomas Mining Dist., in sec. 20, T. 16 S., R. 67 E., M.D.B.&M., Clark County, Nevada.
DMEA-4191	Coso Uranium Incorporated; Mr. Ormond Merritt, Pres. White Swan, Linda Sue, Helen Faith and Esther group of claims. Located in sec. 24 and 25, T. 20 S., R. 37 E., and in sec. 24 and 25, T. 20 S., R. 37-1/2 E., M.D.B.&M., Inyo County, California.

Very truly yours,

S. Ricker
Executive Officer
DMEA Field Team, Region II

c
o
p
y

700

FILE COPY
Surname:

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

MAR 13 1956

Mr. Spangler Richer
Executive Officer
DMEA Field Team, Region II
U. S. Bureau of Mines
Rare and Precious Metals
Experiment Station
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-4191 (Uranium)
Cese Uranium, Inc.
White Swan, et al., groups
Inyo County, California

Dear Mr. Richer:

The captioned application is referred to Region II Field Team for investigation, a field examination, and recommendation. A copy of the application was retained by your office.

Enclosed are copies of memoranda, dated March 2 and 7, 1956, from N. E. Nelson, USGS, and J. E. Crawford, USBM, respectively.

In the event the Field Team believes that Government aid in exploring the subject property is warranted, the method of exploration should be thoroughly discussed with the Applicant.

In regard to the proposed core drilling, it might be possible that by using Nx or Bx size bits in the unconsolidated sandy material and broken granite masses, a fair percentage of core recovery could be made. However, according to data in the application the property is situated on the western flank of Waiwee Ridge with the SE corner having an elevation of 5,400 feet and the western boundary ranging in elevation from 4,300 to 4,400 feet. Consequently, it is possible that the water table is at a considerable depth, in which case dry rotary drilling might be used instead of core drilling at a large saving in cost.

The Applicant's proposal to drill holes on a 100-foot grid to depths of 300 to 500 feet, appears to be rather close-spaced for such depths in the preliminary exploration drilling. However, the

P.C.

field examiners' discussion with the Applicant can probably clear up this question if it arises.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JHB)

Enclosures

APPROVED:

/s/ Robert W. Geehan (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

FMMurphy/izm 3-9-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

700

FILE COPY

Summons:
Murphy
Kilpatrick
Sellers
Selbridge
Johnson

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

MAR 13 1956

Coso Uranium, Inc.
2485 American Avenue
Long Beach, California

Re: Docket No. DMEA-4191 (Uranium)
White Swan, et al., groups
Inyo County, California

Gentlemen:

The application for assistance in exploring the subject groups of claims, under the captioned docket number has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to the Executive Officer of Region II at the following address:

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
U. S. Bureau of Mines
Rare and Precious Metals
Experiment Station
1605 Evans Avenue
Reno, Nevada

Any assistance you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

C. O. Mitchell (for)

Administrator

FMMurphy/izm 3-9-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Region II (2)

P.G.R.

3/8/56

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

RECEIVED
MAR - 7 1956

March 7, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for assistance, DMEA Docket 4191, Coso Uranium, Inc., Inyo County, California

I have reviewed the attached application, Coso Uranium, Inc., DMEA Docket 4191, dated February 20 and received in this office February 27. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

Coso Uranium, Inc., has applied for DMEA assistance to explore for uranium on 26 unpatented mining claims located in Inyo County, California. The proposed exploration project includes 14,300 feet of core and non-core drilling at a unit cost of $7.00. The total estimated cost is $100,100.00.

The applicant has indicated that several shipments of ore have been made to the Atomic Energy Commission. The results of the shipments should be noted by the Field Team.

We recommend that the application be sent to the Field Team and that they consult with E. E. Thurlow, Chief, Salt Lake City Exploration Branch, Atomic Energy Commission.

John E. Crawford

Attachment

3/5/56

IN REPLY REFER TO:

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

RECEIVED
MAR - 5 1956

March 2, 1956

Re: DMEA 4191
Coso Uranium, Inc.
Haiwee Ridge prospect
Inyo County, California
$100,100 - Uranium

Memorandum

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

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application.

The applicant requests Government participation in the probe hole and core hole drilling of a surface deposit of more or less consolidated clastic lake-bed material, of brecciated talus material and the basement granite which underlies the other matter.

The project as tentatively set up consists of 52 drill holes, 100 feet apart to effect coverage of a 12-acre plot. The estimated cost is:

No. of wells	Average depth	Total feet	Cost/ft.	Cost
52	275 ft.	14,300	$7	$100,100

From the lake bed material and the granite small shipments of low grade uranium ore have been made. The shipments total:

Location	Tonnage	Material	Grade ~~%~~ Oz Of Fam
Opencut, No. 2	75	"Lake bed"	0.15 Est.
Adit, No. 5	25	Granite-gravel	0.12 "
2 adits, No. 8	200	"Lake bed"	0.12 "

The grades are estimated as the material had not been processed at the time the application was assembled.

At eight other places work has been done with, as reported and inferred, indifferent results. Apparently the uraniferous material

is distributed over a large area as pockets in the lake bed sediments and thin veinlets or coatings of uranophane on joint and fracture surfaces in the intricately broken granite. In cases the radioactive material permeates the granite immediately adjoining the joints and fractures and gives a reason for thinking the uranium is of hydrothermal origin.

The pockets of ore occur at the contact of the lake beds and the very irregular (humps and pinnacles?) and disintigrated bedrock granite. A number of openings have been driven into the sediments and from them have come the shipments.

Presumedly, but such is not definitely stated, the pockets encountered were mined out. The drilling proposed will search for other pockets. It is not stated that radiometric surface surveys indicated the locations of the pockets, but such is assumed, and anomalous areas will be the centers for drilling. The technical work seems to be well in hand.

To this time the value of the near surface production appears not to have kept pace with the expenditures and no ore is in reserve. That a principal vein system or fissure pattern, leading up through the granite, is responsible for the deposits has not been proven, but as a conjecture, the idea has interest.

An on-the-ground examination is warranted.

Referral to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

February 24, 1956

Subject: DMEA - 4191
Re: Exploration Assistance

Coso Uranium, Inc.
2485 American Avenue
Long Beach, California

Gentlemen:

The receipt of your application dated February 20, 1956 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-4191 and referred to the Rare & Miscellaneous Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

February 24, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region II.

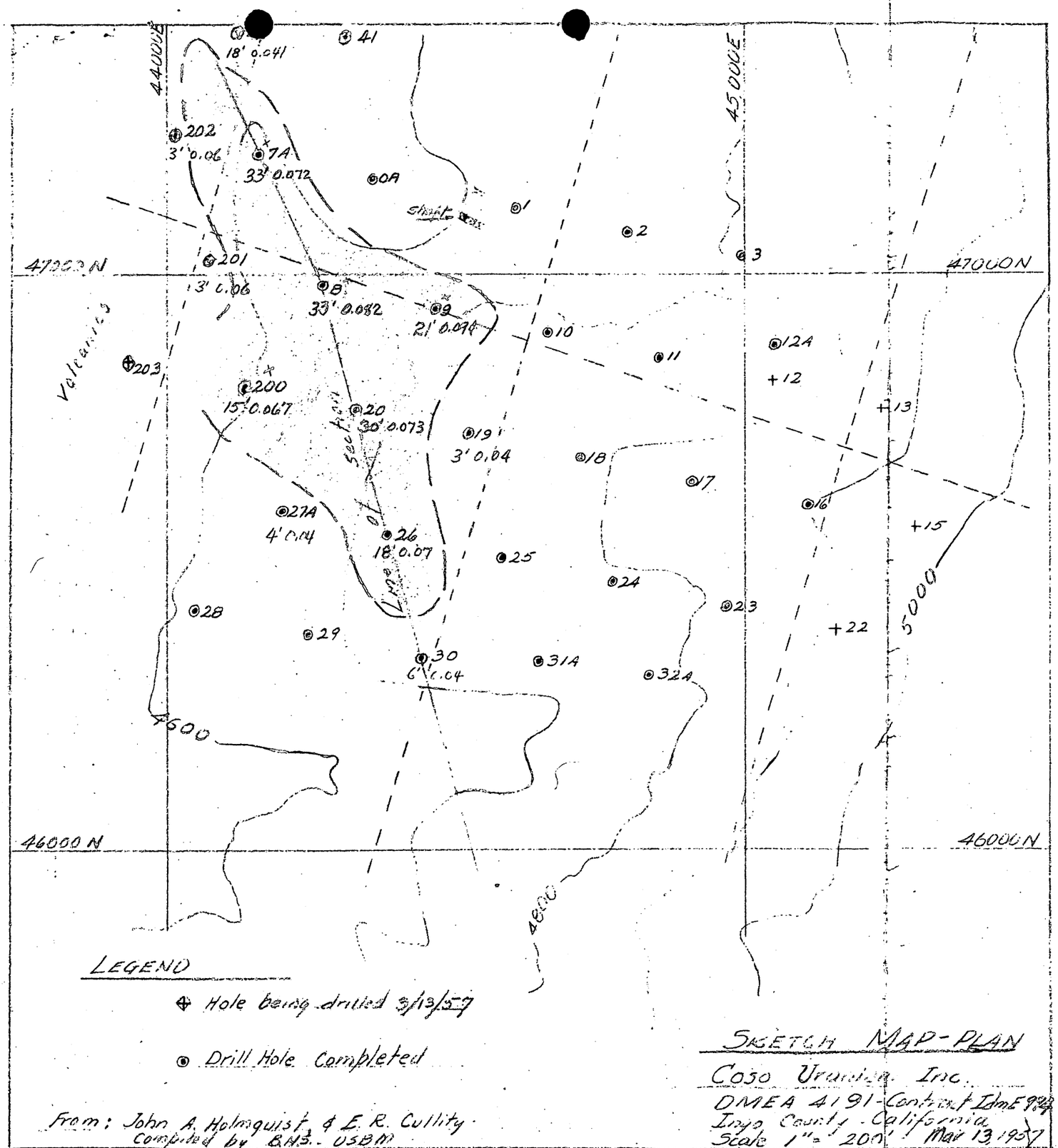
From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region II.

DMEA - 4191 Coso Uranium, Inc.

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


44000E
45000E
47500N
47000N
46000N
46000N
Volcanics
Shaft
Sec. Line
18' 0.041
41
202
3' 0.06
7A
33' 0.072
0A
1
2
3
201
3' 0.06
8
33' 0.082
9
21' 0.094
10
11
12A
12
13
203
200
15' 0.067
20
30' 0.073
19
3' 0.04
18
17
16
15
27A
4' 0.04
26
18' 0.07
25
24
23
22
28
29
30
6' 0.04
31A
32A
5000
4800
4600
LEGEND
Hole being drilled 3/13/57
Drill Hole Completed
From: John A. Holmquist & E. R. Cullity.
Compiled by BHS. USBM
SKETCH MAP-PLAN
Coso Uranium Inc.
DMEA 4191-Contract IdmE 9[illegible]
Inyo County, California
Scale 1" = 200' Mar 13, 1957

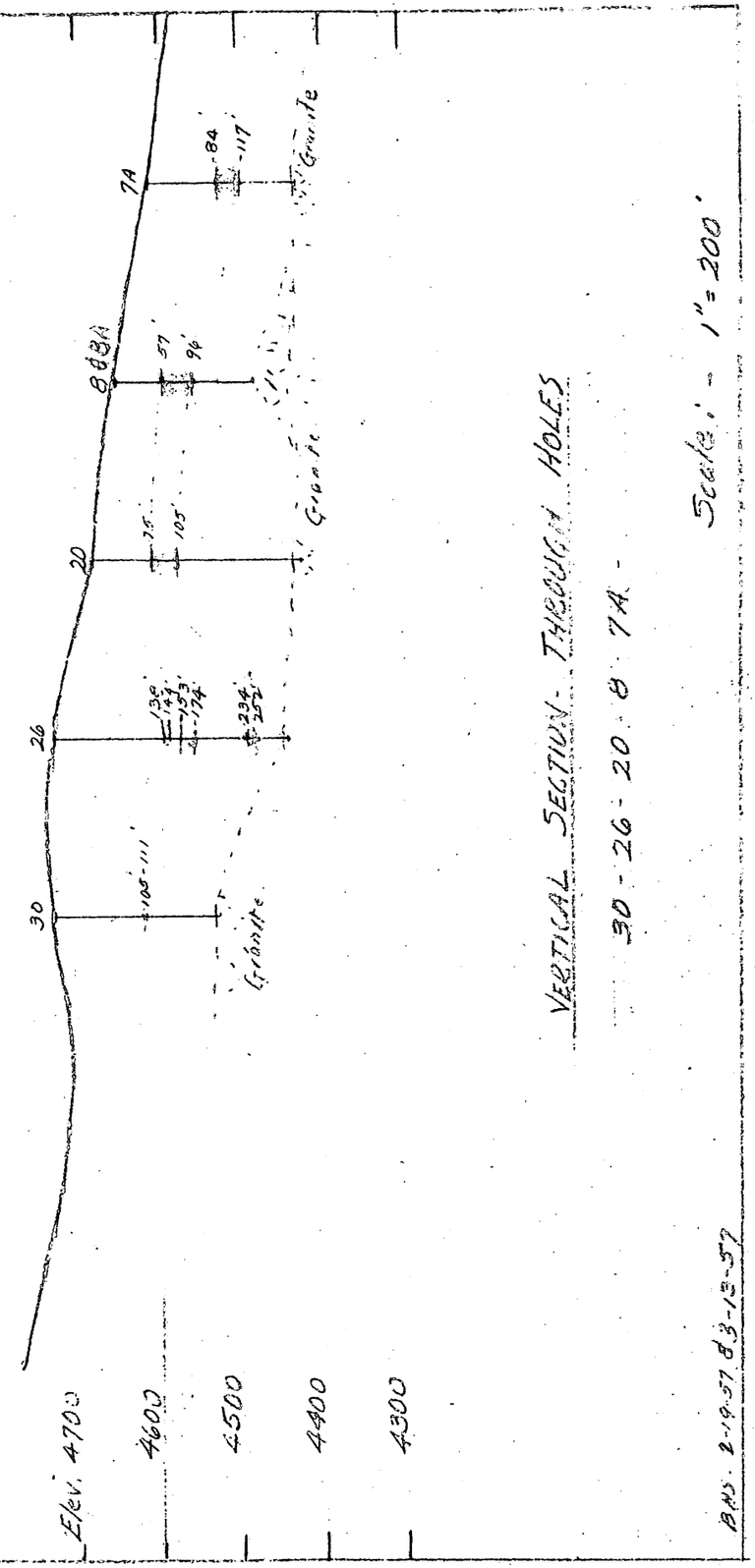
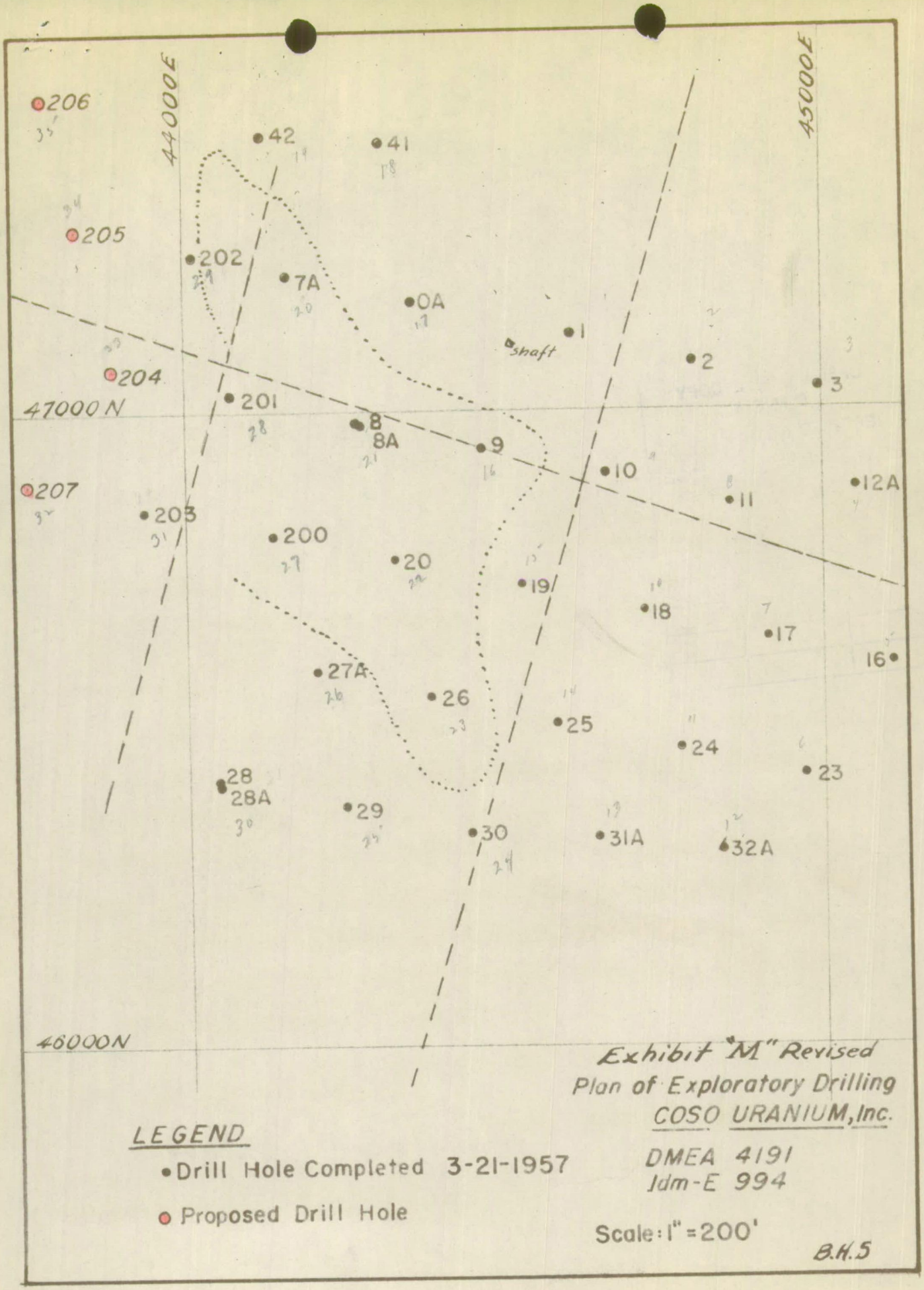
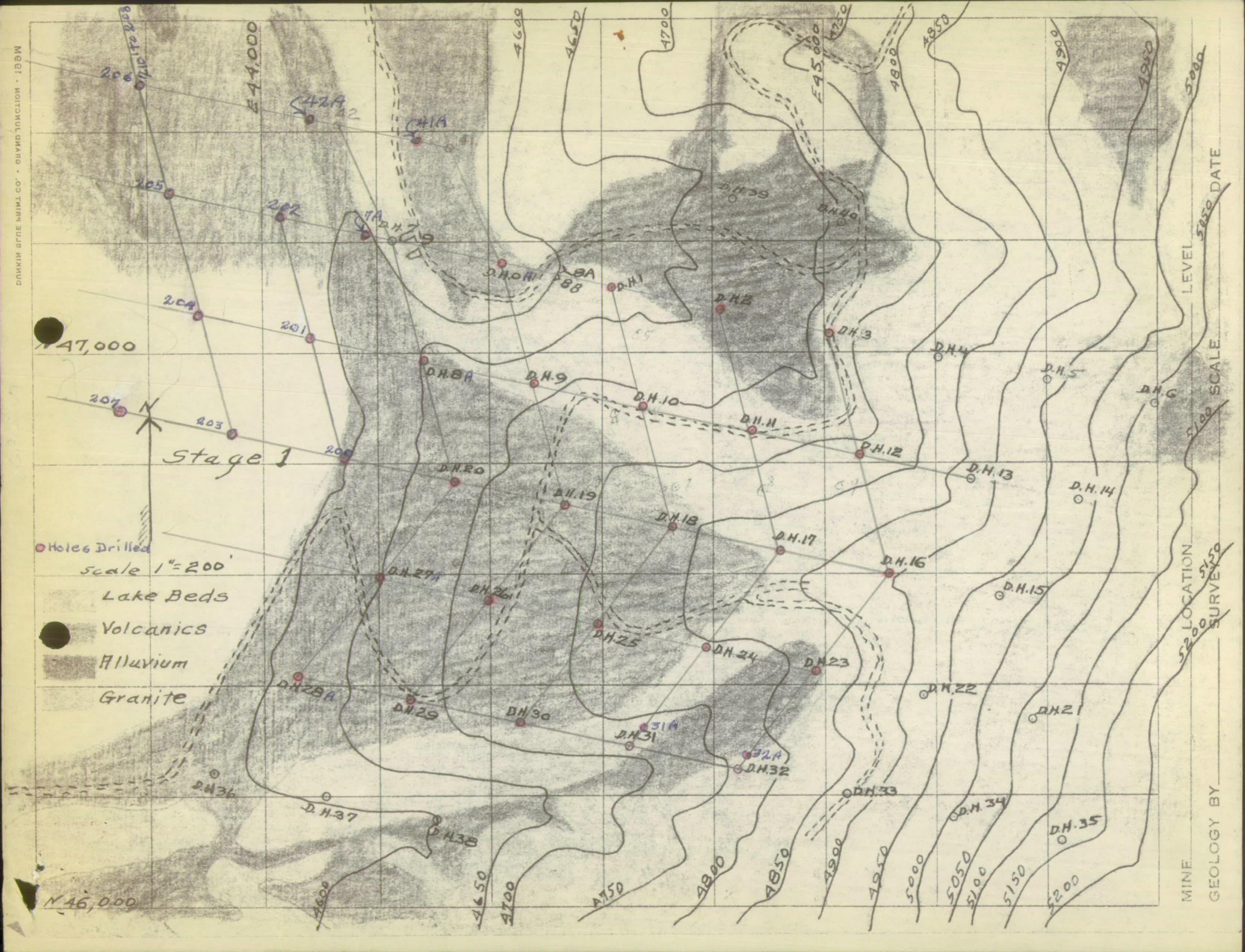

7A
8 & 8A
20
26
30
Granite
Granite
Granite
84
117
57
96
76
105
139
143
153
174
234
252
105-111
Elev. 4700
4600
4500
4400
4300
VERTICAL SECTION - THROUGH HOLES
30 - 26 - 20 - 8 - 7A -
Scale: - 1" = 200'
BHS. 2-19-57 & 3-12-57

Figure 1

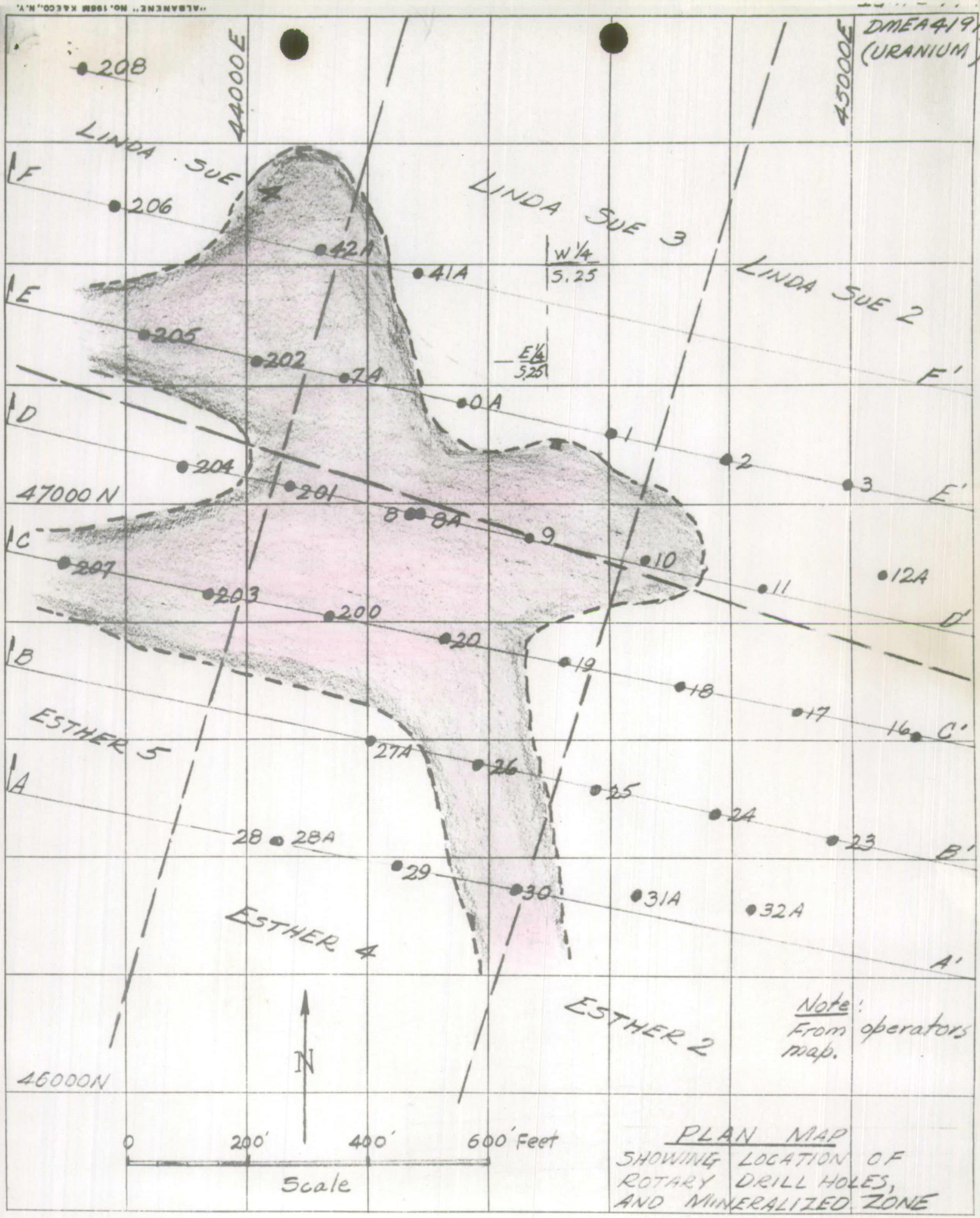

440000E
450000E
47000 N
46000N
206
205
204
207
42
41
202
7A
0A
1
shaft
2
3
201
8
8A
9
10
11
12A
203
200
20
19
18
17
16
27A
26
25
24
23
28
28A
29
30
31A
32A
Exhibit "M" Revised
Plan of Exploratory Drilling
COSO URANIUM, Inc.
LEGEND
• Drill Hole Completed 3-21-1957
○ Proposed Drill Hole
DMEA 4191
Idm-E 994
Scale: 1" = 200'
B.H.S

OFFICIAL FILE COPY
D M E A
RECEIVED APR 30 1957

DATE	INITIALS	CODE

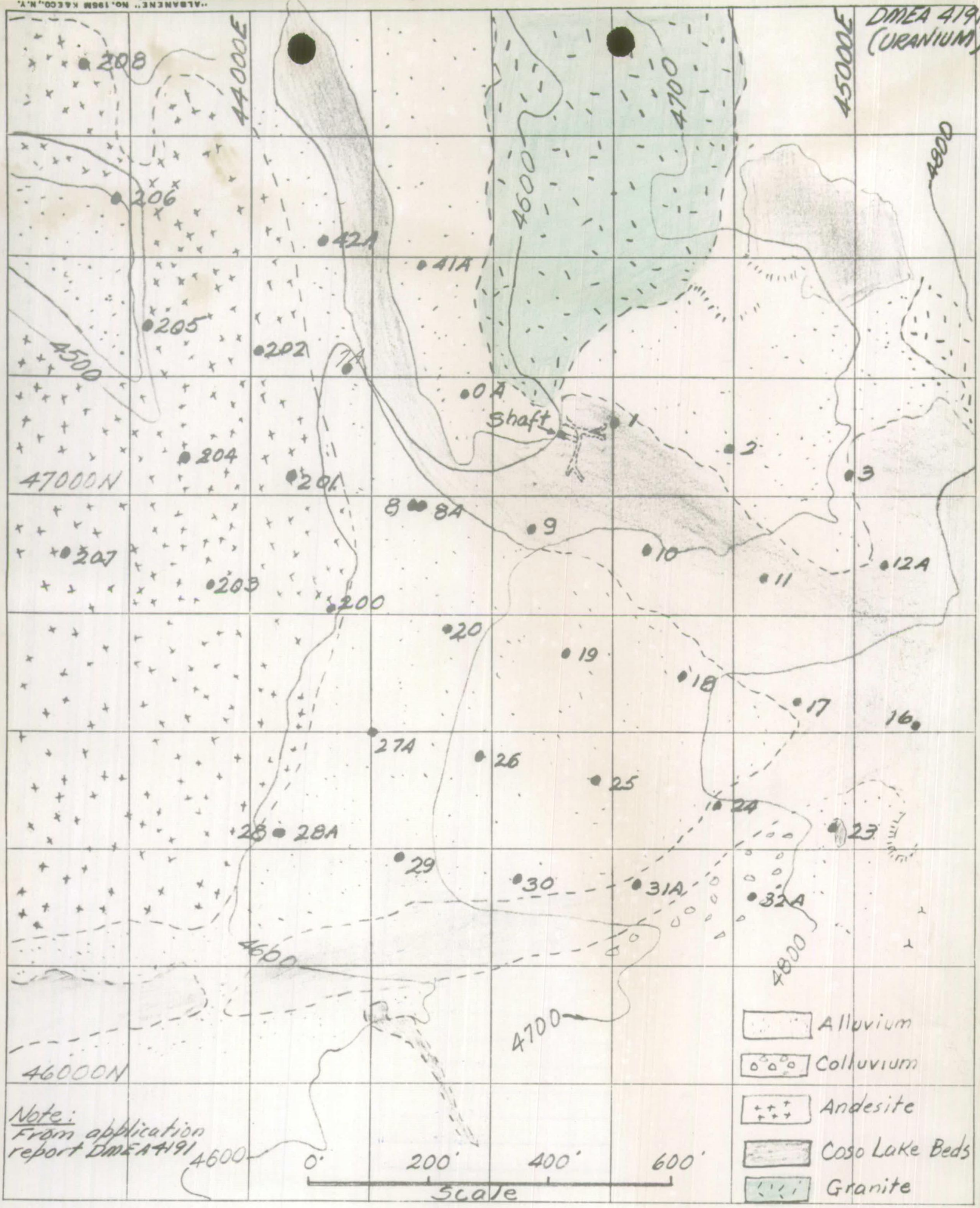

Stage 1
Holes Drilled
Scale 1" = 200'
Lake Beds
Volcanics
Alluvium
Granite
N 47,000
N 46,000
E 44,000
E 45,000
D.H.1
D.H.2
D.H.3
D.H.4
D.H.5
D.H.6
D.H.8A
D.H.9
D.H.10
D.H.11
D.H.12
D.H.13
D.H.14
D.H.15
D.H.16
D.H.17
D.H.18
D.H.19
D.H.20
D.H.21
D.H.22
D.H.23
D.H.24
D.H.25
D.H.26
D.H.27A
D.H.28A
D.H.29
D.H.30
D.H.31
D.H.32
D.H.33
D.H.34
D.H.35
D.H.36
D.H.37
D.H.38
D.H.39
D.H.40
4600
4650
4700
4750
4800
4850
4900
4950
5000
5050
5100
5150
5200
LEVEL
SCALE
DATE
LOCATION
SURVEY
MINE
GEOLOGY BY

EXTRA COPY
D M E A
RECEIVED AUG 1 1957
DATE | INITIALS | CODE



COSO URANIUM, Inc. INYO COUNTY, CALIFORNIA

Figure 3



COSO URANIUM, Inc., INYO COUNTY, CALIFORNIA

Figure 2

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA-4191, Idm-E994
(Uranium)

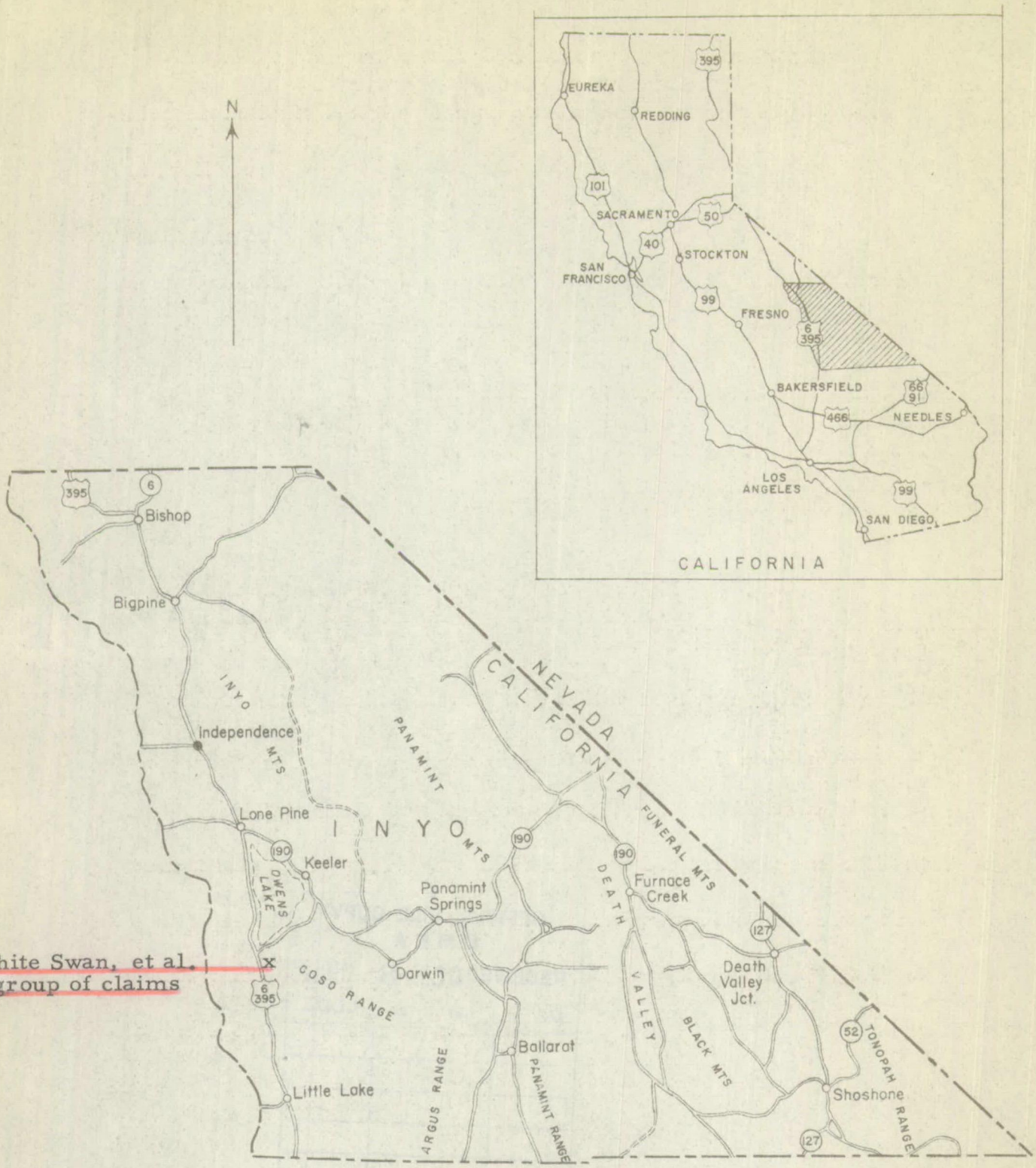


Figure I. INDEX MAP OF INYO COUNTY, CALIFORNIA

0 25 50 75 Miles

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 8 1957

DATE	INITIALS	CODE

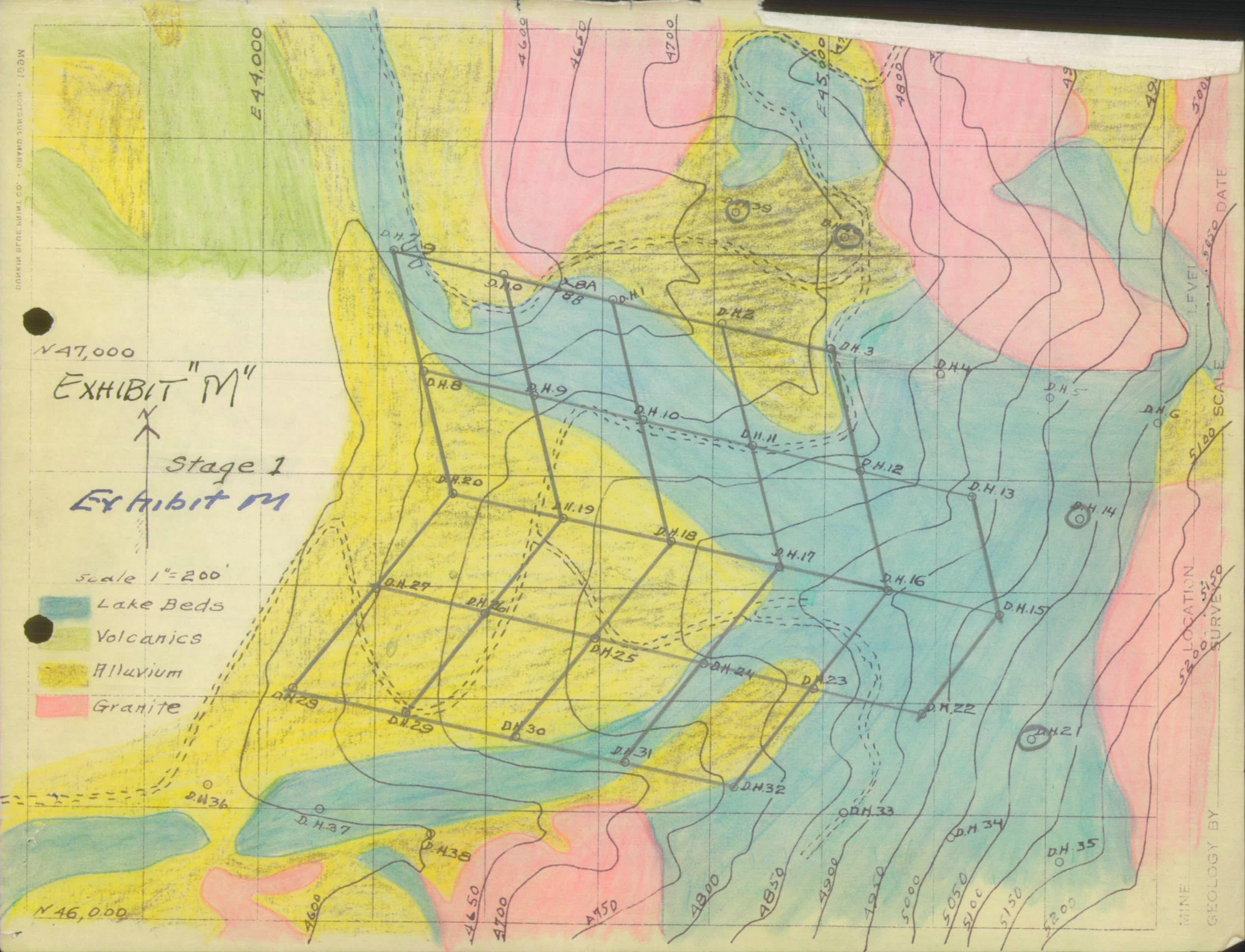


EXHIBIT "M"
Stage 1
Exhibit M
Scale 1" = 200'
Lake Beds
Volcanics
Alluvium
Granite
N47,000
N46,000
E44,000
E45,000
D.H.1
D.H.2
D.H.3
D.H.4
D.H.5
D.H.6
D.H.7
D.H.8
D.H.9
D.H.10
D.H.11
D.H.12
D.H.13
D.H.14
D.H.15
D.H.16
D.H.17
D.H.18
D.H.19
D.H.20
D.H.21
D.H.22
D.H.23
D.H.24
D.H.25
D.H.26
D.H.27
D.H.28
D.H.29
D.H.30
D.H.31
D.H.32
D.H.33
D.H.34
D.H.35
D.H.36
D.H.37
D.H.38
D.H.39
4600
4650
4700
4750
4800
4850
4900
4950
5000
5050
5100
5150
5200
MINE LOCATION SURVEY
GEOLOGY BY
DATE
LEVEL
SCALE

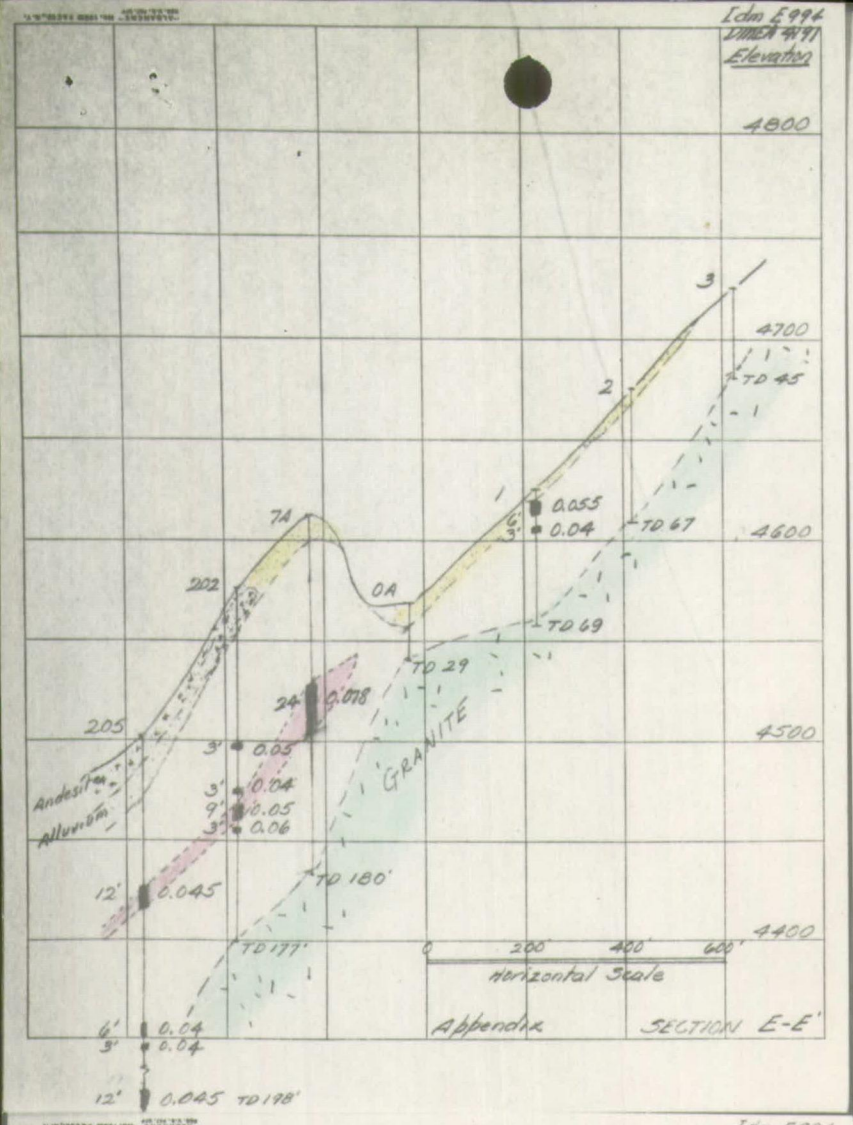
RECEIVED
JAN 7 1957
D.M.E.A.

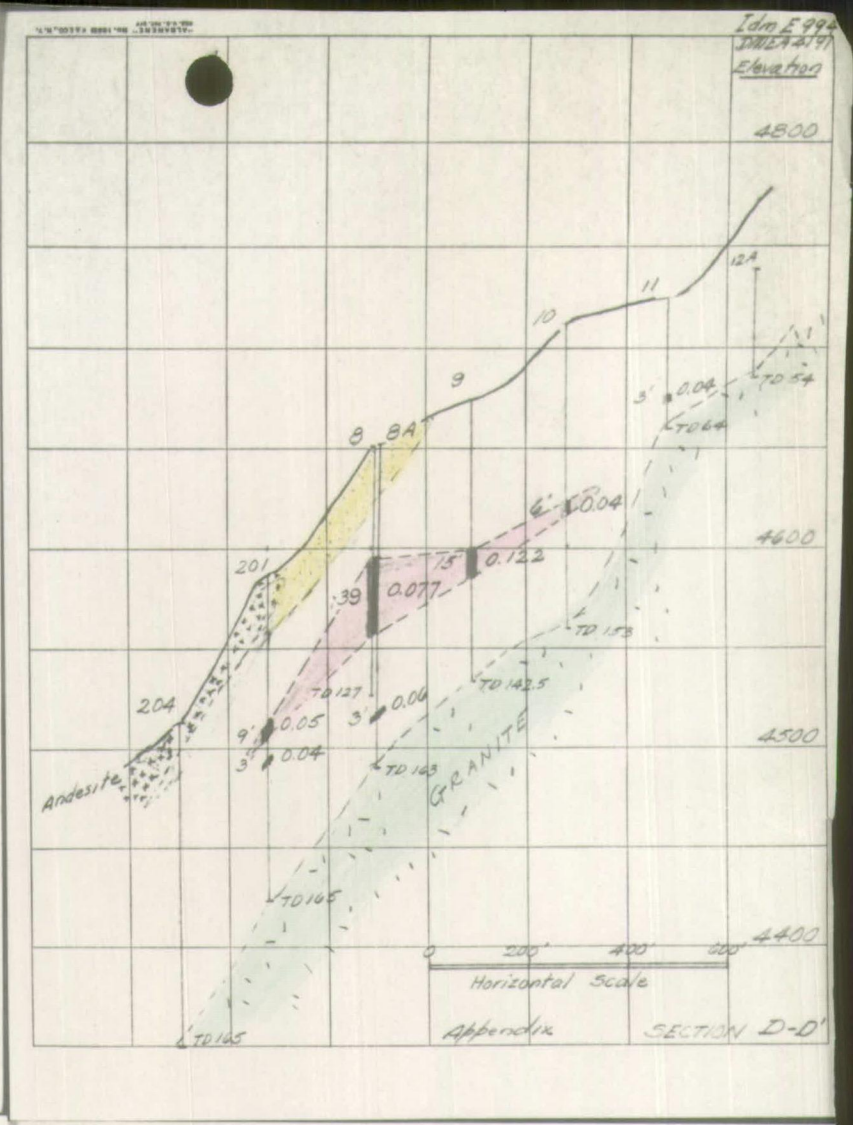
Olancha
BM 3649
RR Car Loading Ramp
Adamson Landing Field
SAND
Vermilion Canyon
GRANT
BM 3715
Grant Airport
LA AQUEDUCT
BM 3766
OWENS
VALLEY
LOS ANGELES
AQUEDUCT
BM 3818
BM 3764
BM 3765
Spring
Well
BM 3788
SOUTHERN
PACIFIC
Summit Creek
BM 3868
CACTUS FLAT
ROAD
Loco
DITCH
BM 3772
HAIWEE
RESERVOIR
Hogback Creek
BM 3923
Water Tank
PIPE LINE
SPILLWAY 3759
Coso URANIUM, INC.
HAIWEE RIDGE
CACTUS FLAT
Thorndyke
Beebe Mine
Jack Henry Mine
Five Tunnels Mine
McCloud Mine
McCloud
Molybdenum Mine
Hogback Cr.

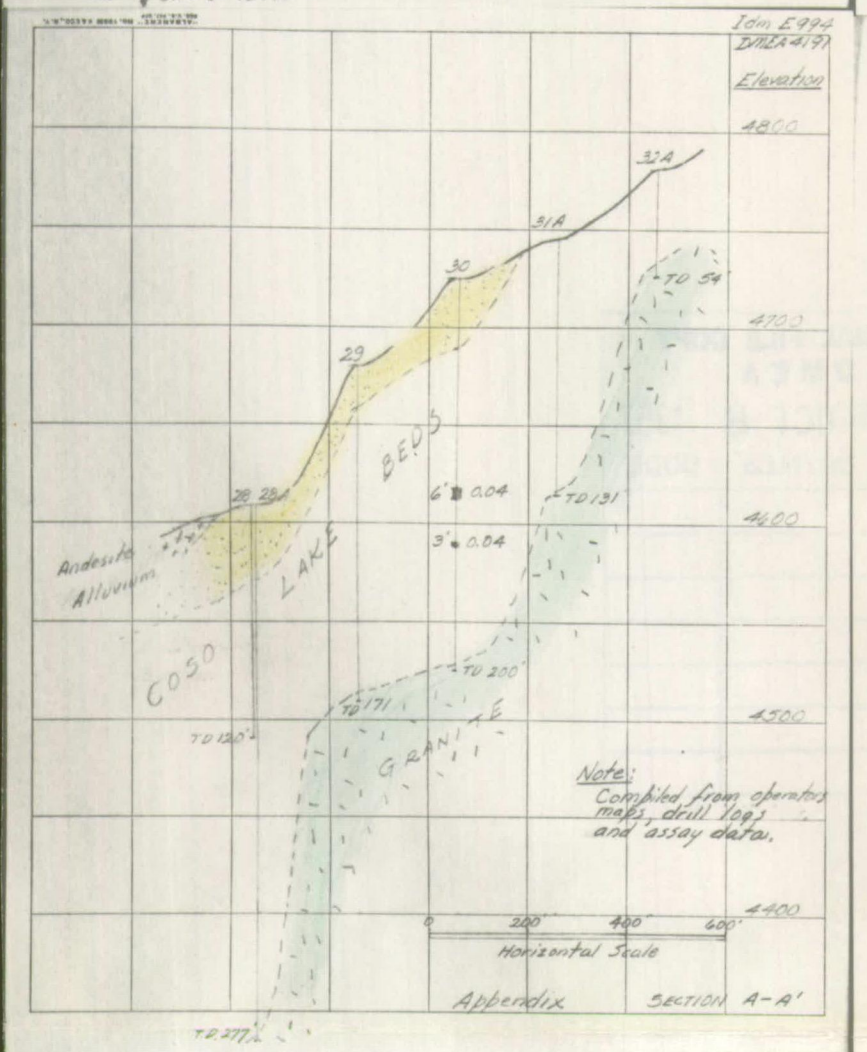
Accompanying Papers
Application Form MF-103

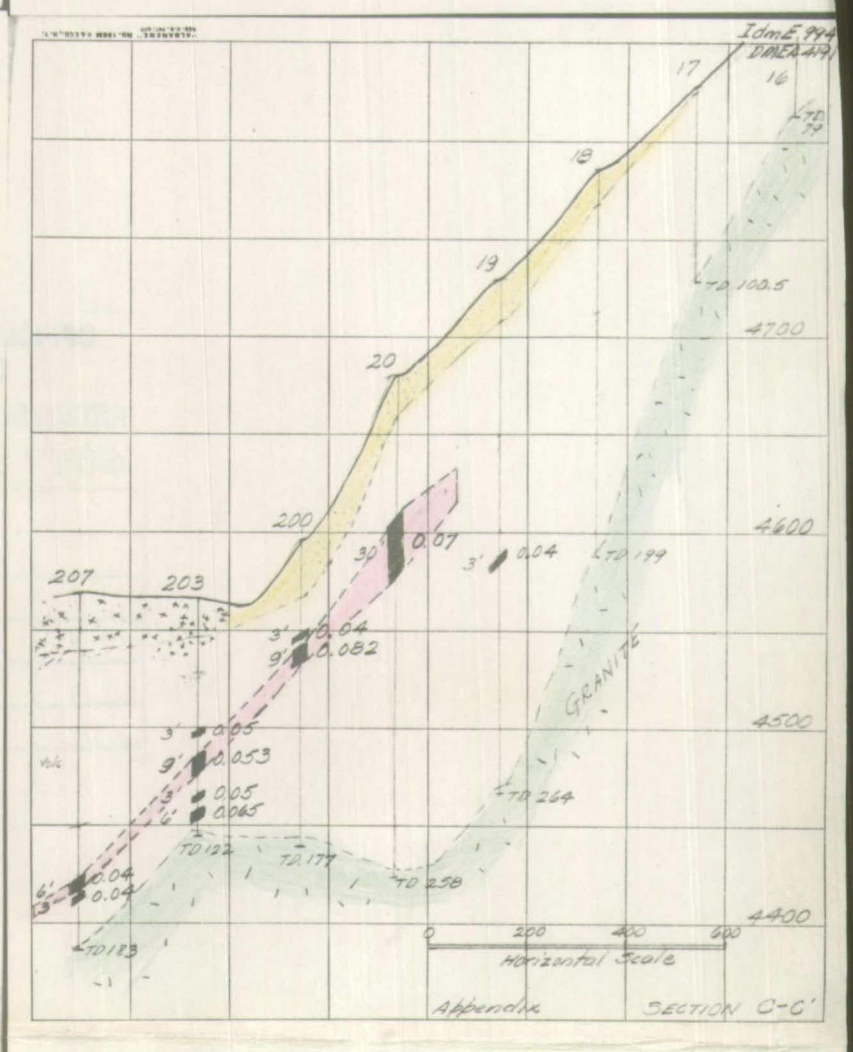
Coso Uranium Inc.
2485 American Ave.
Long Beach 6, Calif.

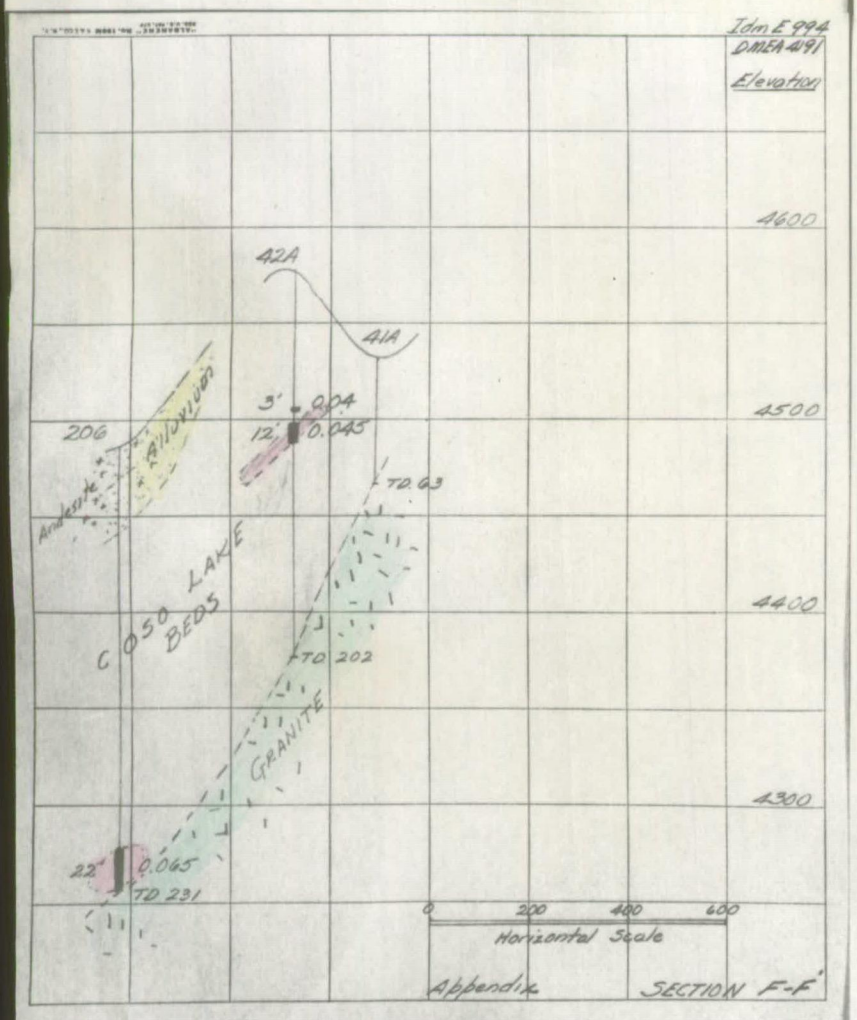
RECEIVED
FEB 23 1956


Idm E994
DMEA 419
Elevation
4800
4700
4600
4500
4400
Andesite
Alluvium
GRANITE
Horizontal Scale
0 200' 400' 600'
Appendix
SECTION E-E'


Idm E994
DMEA 419
Elevation
4800
4600
4500
4400
Andesite
GRANITE
Horizontal Scale
0 200' 400' 600'
Appendix
SECTION D-D'


Idm E994
DMEA 419
Elevation
4800
4700
4600
4500
4400
Andesite
Alluvium
COSO LAKE BEDS
GRANITE
Note:
Compiled from operators maps, drill logs and assay data.
Horizontal Scale
0 200' 400' 600'
Appendix
SECTION A-A'


IdmE 994
DMEA 419
4700
4600
4500
4400
GRANITE
Horizontal Scale
0 200 400 600
Appendix
SECTION C-C'


Idm E994
DMEA 419
Elevation
4600
4500
4400
4300
Andesite
ALLUVIUM
COSO LAKE BEDS
GRANITE
Horizontal Scale
0 200 400 600
Appendix
SECTION F-F'

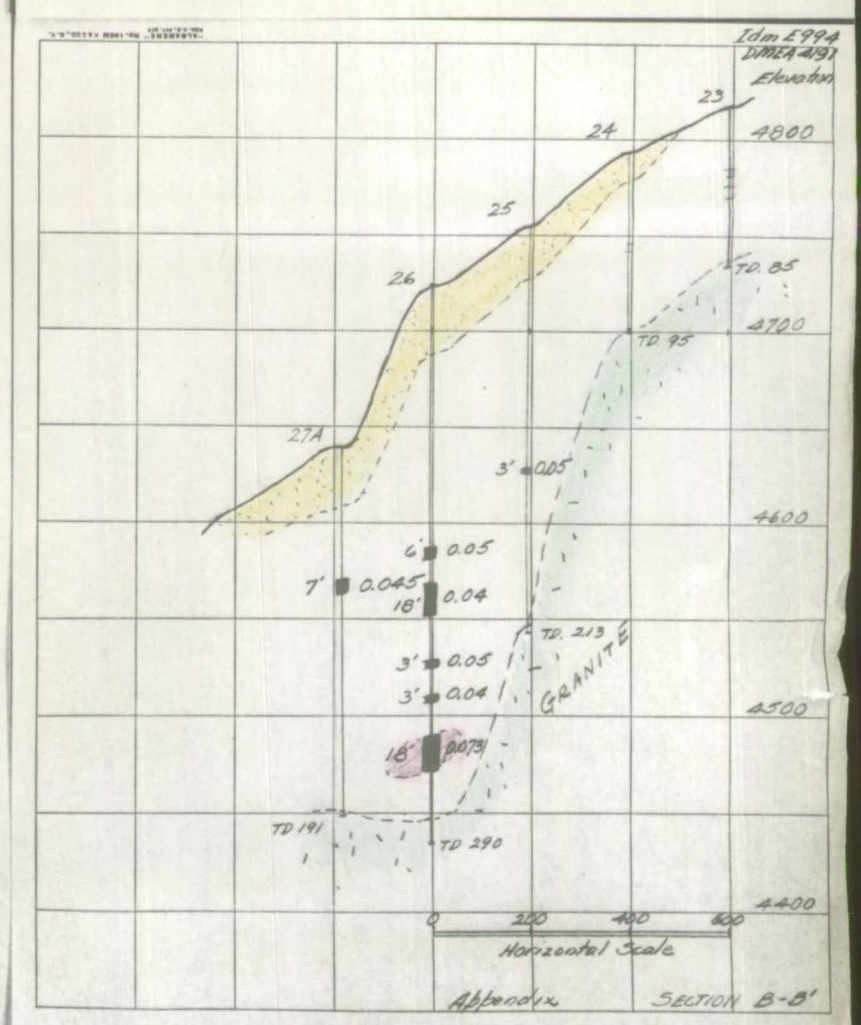

Idm E994
DMEA 419
Elevation
4800
4700
4600
4500
4400
GRANITE
Horizontal Scale
0 200 400 600
Appendix
SECTION B-B'

Fig. 4

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 8 1957

DATE	INITIALS	CODE