IMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

IMEA NO. 4655

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(~~Withdrawn~~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 BIDS
(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

MEMORANDUM

from

Silver Dollar Mining Co.

to

Southern Geophysical Co.
P.O. Box 1598
Grand Junction, Colo.

March 23, 1957

Gentlemen:

Please add the following footages to the specifications sent to you in my letter of March 20th which were inadvertently omitted:

"Rotary tricon air minimum 5,000 ft., maximum 25,000 feet. Rotary core minimum 0 ft., maximum 3190 ft."

Elmer E. Johnston
President

OFFICIAL FILE COPY
RECEIVED APR 1 1957

DATE	INITIALS	CODE

SPECIFICATIONS FOR DRILLING PROJECT

The Silver Dollar Mining Company, an Idaho corporation qualified to do business in Utah, P. O. Box 122, Spokane 10, Washington plans an exploration project with D.M.E.A. assistance on its unpatented lode claims on Fry Mesa in unsurveyed Sections 4, 5, 6, 7, 8, and 17, T. 37 S., R. 17 E., San Juan County, Utah, about 50 miles west of Blanding. Access to the property is by the White Canyon State Highway 45 miles west from Blanding, Utah to To-ko-chi canyon, about one mile west of the Owachomo Natural Bridge road, then 1.5 miles up this canyon along a dirt road onto the Mossback mesa, and then by dirt road northward about three miles onto the property where a network of bulldozer roads extend onto most of the claims.

You are invited to submit a bid on the drilling as specified below:

OFFICIAL FILE COPY
DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE

Nature of holes: Vertical from surface.

Kind of drilling: ARotary tricon air dry where possible, and wet where dry drilling not possible. Rotary core dry where feasible and wet where dry drilling not feasible.

Size of hole: Approximately 5 inches diameter.

Size of core: Between 2 and 3 inches diameter.

Depth of holes: Minimum 20 feet, maximum 300 feet. The company shall specify the approximate feet of depth for each hole and specify usually five feet into the Moenkopi and shall specify the interval to be drilled for core. The driller shall use approved methods and techniques in its drilling operations and make every effort to attain the depth designated by the company. But in the event unusual underground conditions make continued drilling of any hole impractical the driller shall have the right to stop the drilling of this hole and receive payment for depth already drilled in the hole.

Care of cuttings:

1. All drill cuttings, or as close to all as practical and satisfactory to the company representative, shall be recovered for each approximately 2½ foot interval drilled.

2. Dry cuttings for each approximately 2½ foot interval shall be stacked in individual piles in sequence of drilling, or when required by the company cuttings shall be sacked in sacks furnished by the company and marked and placed in rows in sequence of drilling, or when required by the company shall be split on a sample splitter furnished by the company and one-half stacked in rows in sequence of drilling and the other half sacked in sacks furnished by the company and marked and placed upon the samples stacked in rows in the sequence of drilling or placed in a container supplied by the company.

3. Wet cuttings shall be recovered for each approximately 2½ foot interval in containers provided by the driller, and after decanting the water shall be cared for in the same manner as dry samples.

Care of core: Cores shall be placed in containers provided by the company in the sequence of drilling, and the depth to the start and the bottom of each pull of core shall be marked in the container opposite the core from that depth.

Driller's log: The driller is to complete a log for delivery to the company representative before the drill moves to the next drill site. This log is to contain (1) number of hole, (2) date completed, (3) total depth of hole, (4) depth to Moenkopi, and (5) the interval of each kind of rock cut in the hole.

Probe of hole: The driller is to probe each hole at his own expense immediately after completion of the hole. Instrument to be used shall be a standard recording radiometric probe. Recording tape shall be marked with (1) the date completed, (2) number of hole, (3) scale on which probe was operated, (4) measured distance by probe cable from bottom of probe to top of hole.

Inspection of cuttings and core: The driller shall permit a representative of the company at any and all times to inspect the cuttings and/or core.

Date drilling to start: As soon as practicable if and after D.M.E.A. assistance contract is approved, probably in May or June.

Minimum rate at which drilling is to be done: Driller shall maintain a continuous operation of not less than 40 hours a week unless prevented by unusual conditions outside of the driller's control until project is completed or recessed after minimum drilling and upon failure to maintain continuous operation as specified, driller shall be subject to a penalty of $5.00 an hour for non-operative time less than 40 hours a week.

Driller may upon mutual agreement with the company representative operate a second drill on this project.

For any time lost by the driller through failure of the company to provide drill locations the company shall be subject to a penalty of $5.00 for each hour of time so lost.

Drill water supply: Water for drilling is not available at the property but is available from springs close to the main road within 15 to 20 miles. The driller shall haul the necessary drill water in equipment provided by himself at the price bid hereafter.

Drill sites: The company shall specify where holes are to be drilled and where natural sites and access thereto are inadequate it shall prepare a reasonable site and access.

Mobilization and demobilization: Driller shall move equipment to the project site and from the project site as well as from drill site to drill site at his own expense.

State and Federal regulations: The driller shall be an independent contractor and comply with all State and Federal regulations pertaining to his use of equipment and employment of labor upon the property and hold the company blameless from any damage caused by the driller's activity. To this end the driller shall cover his activity with adequate insurace for both labor and public liability.

Payments: The driller shall advance and pay all costs and expenses in connection with drilling and probing. And the company shall pay in full on or before ten days after the driller delivers the bill for items up to the end of the month preceding delivery.

The following are the rates bid by the undersigned driller:

Drilling with Tri-con rotary air.

From	To	Per Foot
0 feet	300 feet	$ 1.12

Drilling with core barrel for between 2 and 3 inch size core:

0 feet	100 feet	$ 4.70
100 feet	200 feet	4.90
200 feet	300 feet	5.20

Water shall be hauled at $ 0.10 per mile of necessary water truck travel and $2.25 per hour of hauling time.

Date: March 26, 1957.

Bidder SOUTHERN GEOPHYSICAL COMPANY, INC.

Uranium Division

Address P. O. Box 1398

Grand Junction, Colorado

Telephone: CHapel 3-0632

The foregoing bid is subject to approval by the company and the specifications will be a part of the drilling contract.

MEMORANDUM

from

Silver Dollar Mining Co.

to

American Drilling Co.
~~615 North First St.~~
Grand Junction, Colo.

March 23, 1957

Gentlemen:

Please add the following footages to the specifications sent to you in my letter of March 20th which were inadvertently omitted:

"Rotary tricon air minimum 5,000 ft., maximum 25,000 feet. Rotary core minimum 0 ft., maximum 3190 ft."

Elmer E. Johnston
President

SPECIFICATIONS FOR DRILLING PROJECT

The Silver Dollar Mining Company, an Idaho corporation qualified to do business in Utah, P. O. Box 122, Spokane 10, Washington plans an exploration project with D.M.E.A. assistance on its unpatented lode claims on Fry Mesa in unsurveyed Sections 4, 5, 6, 7, 8, and 17, T. 37 S., R. 17 E., San Juan County, Utah, about 50 miles west of Blanding. Access to the property is by the White Canyon State Highway 45 miles west from Blanding, Utah to To-ko-chi canyon, about one mile west of the Owachomo Natural Bridge road, then 1.5 miles up this canyon along a dirt road onto the Mossback mesa, and then by dirt road northward about three miles onto the property where a network of bulldozer roads extend onto most of the claims.

You are invited to submit a bid on the drilling as specified below:

Nature of holes: Vertical from surface.

Kind of drilling: Rotary tricone air dry where possible, and wet where dry drilling not possible. Rotary core dry where feasible and wet where dry drilling not feasible.

Size of hole: Approximately [illegible] inches diameter.

Size of Core: Between 2 and 3 inches diameter.

Depth of holes: Minimum 20 feet, maximum 300 feet. The company shall specify the approximate feet of depth for each hole and specify usually five feet into the Moenkopi and shall specify the interval to be drilled for core. The driller shall use approved methods and techniques in its drilling operations and make every effort to attain the depth designated by the company. But in the event unusual underground conditions make continued drilling of any hole impractical the driller shall have the right to stop the drilling of this hole and receive payment for depth already drilled in the hole.

Care of cuttings:

1. All drill cuttings, or as close to all as practical and satisfactory to the company representative, shall be recovered for each approximately $2\frac{1}{2}$ foot interval drilled.

2. Dry cuttings for each approximately $2\frac{1}{2}$ foot interval shall be stacked in individual piles in sequence of drilling, or when required by the company cuttings shall be sacked in sacks furnished by the company and marked and placed in rows in sequence of drilling, or when required by the company shall be split on a sample splitter furnished by the company and one-half stacked in rows in sequence of drilling and the other half sacked in sacks furnished by the company and marked and placed upon the samples stacked in rows in the sequence of drilling or placed in a container supplied by the company.

3. **Wet cuttings shall be recovered for each approximately 2½ foot interval in containers provided by the driller, and after decanting the water shall be cared for in the same manner as dry samples.**

Care of Core: Cores shall be placed in containers provided by the company in the sequence of drilling, and the depth to the start and the bottom of each pull of core shall be marked in the container opposite the core from that depth.

Driller's log: The driller is to complete a log for delivery to the company representative before the drill moves to the next drill site. This log is to contain (1) number of hole, (2) date completed, (3) total depth of hole, (4) depth to Moenkopi, and (5) the interval of each kind of rock cut in the hole.

Probe of hole: The driller is to probe each hole at his own expense immediately after completion of the hole. Instrument to be used shall be a standard recording radiometric probe. Recording tape shall be marked with (1) the date completed, (2) number of hole, (3) scale on which probe was operated, (4) measured distance by probe cable from bottom of probe to top of hole.

Inspection of cuttings and core: The driller shall permit a representative of the company at any and all times to inspect the cuttings and/or core.

Date drilling to start: As soon as practicable if and after D.M.E.A. assistance contract is approved, probably in May or June.

Minimum rate at which drilling is to be done: Driller shall maintain a continuous operation of not less than 48 hours a week unless prevented by unusual conditions outside of the driller's control until project is completed or recessed after minimum drilling and upon failure to maintain continuous operation as specified, driller shall be subject to a penalty of $5.00 an hour for non-operative time less than 48 hours a week.

Driller may upon mutual agreement with the company representative operate a second drill on this project.

For any time lost by the driller through failure of the company to provide drill locations the company shall be subject to a penalty of $5.00 for each hour of time so lost.

Drill water supply: Water for drilling is not available at the property but is available from springs close to the main road within 15 to 20 miles. The driller shall haul the necessary drill water in equipment provided by himself at the price bid hereafter.

Drill sites: The company shall specify where holes are to be drilled and where natural sites and access thereto are inadequate it shall prepare a reasonable site and access.

Mobilization and demobilization: Driller shall move equipment to the project site and from the project site as well as from drill site to drill site at his own expense.

State and Federal regulations: The driller shall be an independent contractor and comply with all State and Federal regulations pertaining to his use of equipment and employment of labor upon the property and hold the company blameless from any damage caused by the driller's activity. To this end the driller shall cover his activity with adequate insurance for both labor and public liability.

Payments: The driller shall advance and pay all costs and expenses in connection with drilling and probing. And the company shall pay in full on or before ten days after the driller delivers the bill for items up to the end of the month preceding delivery.

The following are the rates bid by the undersigned driller:

Drilling with Tri-con rotary air.

From	To	Per Foot
0 feet	300 feet	$ 6.10

Drilling with core barrel for between 2 and 3 inch size core: *

		2 & 3"	NX
0 feet	100 feet	$ 3.75	$ 3.25
100 feet	200 feet	4.00	$ 3.50
200 feet	300 feet	4.25	$ 3.75

in sand & shale

Water shall be hauled at none per mile of necessary water truck travel and none per hour of hauling time.

Date: 3-25, 1957.

Bidder American Drilling Company
by Richard Tears

Address ~~AMERICAN DRILLING COMPANY~~
615 NORTH FIRST STREET
GRAND JUNCTION, COLORADO

The foregoing bid is subject to approval by the company and the specifications will be a part of the drilling contract.

* Coring conglomerate @ $15.00/hr plus bit cost

MEMORANDUM

from

Silver Dollar Mining Co.

to

Mountain States Mining Co.
~~Symons Building~~
Spokane 4, Washington

March 23, 1957

Gentlemen:

Please add the following footages to the specifications sent to you in my letter of March 20th which were inadvertently omitted:

"Rotary tricon air minimum 5,000 ft., maximum 25,000 feet. Rotary core minimum 0 ft., maximum 3190 ft."

Elmer E. Johnston
President

SPECIFICATIONS FOR DRILLING PROJECT

The Silver Dollar Mining Company, an Idaho corporation qualified to do business in Utah, P. O. Box 122, Spokane 10, Washington plans an exploration project with D.M.E.A. assistance on its unpatented lode claims on Fry Mesa in unsurveyed Sections 4, 5, 6, 7, 8, and 17, T. 37 S., R. 17 E., San Juan County, Utah, about 50 miles west of Blanding. Access to the property is by the White Canyon State Highway 45 miles west from Blanding, Utah to To-ko-chi canyon, about one mile west of the Owachomo Natural Bridge road, then 1.5 miles up this canyon along a dirt road onto the Mossback mesa, and then by dirt road northward about three miles onto the property where a network of bulldozer roads extend onto most of the claims.

You are invited to submit a bid on the drilling as specified below:

Official EXTRA COPY

DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE

Nature of holes: Vertical from surface.

Kind of drilling: A Rotary tricon air dry where possible, and wet where dry drilling not possible. Rotary core dry where feasible and wet where dry drilling not feasible.

Size of hole: Approximately 5 inches diameter.

Size of core: Between 2 and 3 inches diameter.

Depth of holes: Minimum 20 feet, maximum 300 feet. The company shall specify the approximate feet of depth for each hole and specify usually five feet into the Moenkopi and shall specify the interval to be drilled for core. The driller shall use approved methods and techniques in its drilling operations and make every effort to attain the depth designated by the company. But in the event unusual underground conditions make continued drilling of any hole impractical the driller shall have the right to stop the drilling of this hole and receive payment for depth already drilled in the hole.

Care of cuttings:

1. All drill cuttings, or as close to all as practical and satisfactory to the company representative, shall be recovered for each approximately 2½ foot interval drilled.

2. Dry cuttings for each approximately 2½ foot interval shall be stacked in individual piles in sequence of drilling, or when required by the company cuttings shall be sacked in sacks furnished by the company and marked and placed in rows in sequence of drilling, or when required by the company shall be split on a sample splitter furnished by the company and one-half stacked in rows in sequence of drilling and the other half sacked in sacks furnished by the company and marked and placed upon the samples stacked in rows in the sequence of drilling or placed in a container supplied by the company.

3. Wet cuttings shall be recovered for each approximately 2½ foot interval in containers provided by the driller, and after decanting the water shall be cared for in the same manner as dry samples.

Care of core: Cores shall be placed in containers provided by the company in the sequence of drilling, and the depth to the start and the bottom of each pull of core shall be marked in the container opposite the core from that depth.

Driller's log: The driller is to complete a log for delivery to the company representative before the drill moves to the next drill site. This log is to contain (1) number of hole, (2) date completed, (3) total depth of hole, (4) depth to Moenkopi, and (5) the interval of each kind of rock cut in the hole.

Probe of hole: The driller is to probe each hole at his own expense immediately after completion of the hole. Instrument to be used shall be a standard recording radiometric probe. Recording tape shall be marked with (1) the date completed, (2) number of hole, (3) scale on which probe was operated, (4) measured distance by probe cable from bottom of probe to top of hole.

Inspection of cuttings and core: The driller shall permit a representative of the company at any and all times to inspect the cuttings and/or core.

Date drilling to start: As soon as practicable if and after D.M.E.A. assistance contract is approved, probably in May or June.

Minimum rate at which drilling is to be done: Driller shall maintain a continuous operation of not less than 48 hours a week unless prevented by unusual conditions outside of the driller's control until project is completed or recessed after minimum drilling and upon failure to maintain continuous operation as specified, driller shall be subject to a penalty of $5.00 an hour for non-operative time less than 48 hours a week.

Driller may upon mutual agreement with the company representative operate a second drill on this project.

For any time lost by the driller through failure of the company to provide drill locations the company shall be subject to a penalty of $5.00 for each hour of time so lost.

Drill water supply: Water for drilling is not available at the property but is available from springs close to the main road within 15 to 20 miles. The driller shall haul the necessary drill water in equipment provided by himself at the price bid hereafter.

Drill sites: The company shall specify where holes are to be drilled and where natural sites and access thereto are inadequate it shall prepare a reasonable site and access.

Mobilization and demobilization: Driller shall move equipment to the project site and from the project site as well as from drill site to drill site at his own expense.

State and Federal regulations: The driller shall be an independent contractor and comply with all State and Federal regulations pertaining to his use of equipment and employment of labor upon the property and hold the company blameless from any damage caused by the driller's activity. To this end the driller shall cover his activity with adequate insurance for both labor and public liability.

Payments: The driller shall advance and pay all costs and expenses in connection with drilling and probing. And the company shall pay in full on or before ten days after the driller delivers the bill for items up to the end of the month preceding delivery.

The following are the rates bid by the undersigned driller:

Drilling with Tri-con rotary air.

From	To	Per Foot
0 feet	300 feet	$1.60 per foot, at 5000 ft 1.50 per foot of over 5000

Drilling with core barrel for between 2 and 3 inch size core:

0 feet	100 feet	$3.00 per foot
100 feet	200 feet	3.50 " "
200 feet	300 feet	4.00 " " intervals cored

Water shall be hauled at 12¢ per mile of necessary water truck travel and 225 per hour of hauling time.

Date: 3/27/57 1957

Subject to Prior Commitments and approval by Company Director

Bidder Mountain States Mining Co.
by R. J. McClaine Pres.

Address Symons Bldg. Spokane
Fry Canyon (Fruitville Utah)

UMC
RECEIVED APR 1 1957
INITIALS

The foregoing bid is subject to approval by the company and the specifications will be a part of the drilling contract.

COPY

MEMORANDUM

from

Silver Dollar Mining Co.

to

Western Mine Supply Co.
P.O. Box 57
Monticello, Utah

March 23, 1957

Gentlemen:

Please add the following footages to the specifications sent to you in my letter of March 20th which were inadvertently omitted:

"Rotary tricon air minimum 5,000 ft., maximum 25,000 feet. Rotary core minimum 0 ft., maximum 3190 ft."

Elmer E. Johnston
President

WESTERN MINE SUPPLY CO.
P.O. BOX 57
MONTICELLO, UTAH

March 23, 1957

Silver Dollar Mining Co.
W. 909 Sprague
Spokane 4, Washington

Att: Mr. Elmer E. Johnston

Dear Sirs,

Inclosed please find the bid on the drilling as requested in your letter of March 20, 1957.

We have either one or two drill rigs and all the necessary equipment that will be required for this drilling project. Having mines of our own and having drilled in this area previously we feel that we can do a satisfactory job on this drilling project, if there are any variations from this bid we would be glad to go over them with you.

Thank you for your consideration in this matter.

Very Truly Yours,

Western Mine Supply Co.

K R Bailey Jr.

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 29 1957

DATE	INITIALS	CODE

SPECIFICATIONS FOR DRILLING PROJECT

The Silver Dollar Mining Company, an Idaho corporation qualified to do business in Utah, P. O. Box 122, Spokane 10, Washington plans an exploration project with D.M.E.A. assistance on its unpatented lode claims on Fry Mesa in unsurveyed Sections 4, 5, 6, 7, 8, and 17, T. 37 S., R. 17 E., San Juan County, Utah, about 50 miles west of Blanding. Access to the property is by the White Canyon State Highway 45 miles west from Blanding, Utah to To-ko-chi canyon, about one mile west of the Owachomo Natural Bridge road, then 1.5 miles up this canyon along a dirt road onto the Mossback mesa, and then by dirt road northward about three miles onto the property where a network of bulldozer roads extend onto most of the claims.

You are invited to submit a bid on the drilling as specified below:

EXTRA COPY
DMEA
RECEIVED MAR 29 1957

DATE	INITIALS	CODE

Nature of holes: Vertical from surface.

Kind of drilling: Rotary tricon air dry where possible, and wet where dry drilling not possible. Rotary core dry where feasible and wet where dry drilling not feasible.

Size of hole: Approximately 5 inches diameter.

Size of Core: Between 2 and 3 inches diameter.

Depth of holes: Minimum 20 feet, maximum 300 feet. The company shall specify the approximate feet of depth for each hole and specify usually five feet into the Moenkopi and shall specify the interval to be drilled for core. The driller shall use approved methods and techniques in its drilling operations and make every effort to attain the depth designated by the company. But in the event unusual underground conditions make continued drilling of any hole impractical the driller shall have the right to stop the drilling of this hole and receive payment for depth already drilled in the hole.

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3. Wet cuttings shall be recovered for each approximately 2½ foot interval in containers provided by the driller, and after decanting the water shall be cared for in the same manner as dry samples.

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The following are the rates bid by the undersigned driller:

Drilling with Tri-con rotary air.

From	To	Per Foot
0 feet	300 feet	$ 3.45

Drilling with core barrel for between 2 and 3 inch size core:

0 feet	100 feet	$ 4.50
100 feet	200 feet	5.00
200 feet	300 feet	5.50

Water shall be hauled at ------ per mile of necessary water truck travel and $ 7.00 per hour of hauling time.

Date: March 23, 1957, 1957.

Bidder Western Mine Supply Co.

By [signature]

Address Monticello, Utah

The foregoing bid is subject to approval by the company and the specifications will be a part of the drilling contract.

MEMORANDUM

from

Silver Dollar Mining Co.

to

Fritz & Erickson
Box 365
Dove Creek, Colo.

March 23, 1957

Gentlemen:

Please add the following footages to my specifications sent to you in my letter of March 20th which were inadvertently omitted:

"Rotary tricon air minimum 5,000 ft., maximum 25,000 feet. Rotary core minimum 0 ft., maximum 3190 ft."

Elmer E. Johnston
President

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You are invited to submit a bid on the drilling as specified below:

EXTRA COPY
DMEA
RECEIVED MAR 29

DATE	INITIALS	CODE

Nature of holes: Vertical from surface.

Kind of drilling: Rotary tricon air dry where possible, and wet where dry drilling not possible. Rotary core dry where feasible and wet where dry drilling not feasible.

Size of hole: Approximately 5 inches diameter.

Size of Core: Between 2 and 3 inches diameter.

Depth of holes: Minimum 20 feet, maximum 300 feet. The company shall specify the approximate feet of depth for each hole and specify usually five feet into the Moenkopi and shall specify the interval to be drilled for core. The driller shall use approved methods and techniques in its drilling operations and make every effort to attain the depth designated by the company. But in the event unusual underground conditions make continued drilling of any hole impractical the driller shall have the right to stop the drilling of this hole and receive payment for depth already drilled in the hole.

Care of cuttings:

1. All drill cuttings, or as close to all as practical and satisfactory to the company representative, shall be recovered for each approximately 2½ foot interval drilled.

2. Dry cuttings for each approximately 2½ foot interval shall be stacked in individual piles in sequence of drilling, or when required by the company cuttings shall be sacked in sacks furnished by the company and marked and placed in rows in sequence of drilling, or when required by the company shall be split on a sample splitter furnished by the company and one-half stacked in rows in sequence of drilling and the other half sacked in sacks furnished by the company and marked and placed upon the samples stacked in rows in the sequence of drilling or placed in a container supplied by the company.

3. Wet cuttings shall be recovered for each approximately 2½ foot interval in containers provided by the driller, and after decanting the water shall be cared for in the same manner as dry samples.

Care of Core: Cores shall be placed in containers provided by the company in the sequence of drilling, and the depth to the start and the bottom of each puit of core shall be marked in the container opposite the core from that depth.

Driller's log: The driller is to complete a log for delivery to the company representative before the drill moves to the next drill site. This log is to contain (1) number of hole, (2) date completed, (3) total depth of hole, (4) depth to Moenkopi, and (5) the interval of each kind of rock cut in the hole.

Probe of hole: The driller is to probe each hole at his own expense immediately after completion of the hole. Instrument to be used shall be a standard recording radiometric probe. Recording tape shall be marked with (1) the date completed, (2) number of hole, (3) scale on which probe was operated, (4) measured distance by probe cable from bottom of probe to top of hole.

Inspection of cuttings and core: The driller shall permit a representative of the company at any and all times to inspect the cuttings and/or core.

Date drilling to start: As soon as practicable if and after D.M.E.A. assistance contract is approved, probably in May or June.

Minimum rate at which drilling is to be done: Driller shall maintain a continuous operation of not less than 48 hours a week unless prevented by unusual conditions outside of the driller's control until project is completed or recessed after minimum drilling and upon failure to maintain continuous operation as specified, driller shall be subject to a penalty of $5.00 an hour for non-operative time less than 48 hours a week.

Driller may upon mutual agreement with the company representative operate a second drill on this project.

For any time lost by the driller through failure of the company to provide drill locations the company shall be subject to a penalty of $5.00 for each hour of time so lost.

Drill water supply: Water for drilling is not available at the property but is available from springs close to the main road within 15 to 20 miles. The driller shall haul the necessary drill water in equipment provided by himself at the price bid hereafter.

Drill sites: The company shall specify where holes are to be drilled and where natural sites and access thereto are inadequate it shall prepare a reasonable site and access.

Mobilization and demobilization: Driller shall move equipment to the project site and from the project site as well as from drill site to drill site at his own expense.

State and Federal regulations: The driller shall be an independent contractor and comply with all State and Federal regulations pertaining to his use of equipment and employment of labor upon the property and hold the company blameless from any damage caused by the driller's activity. To this end the driller shall cover his activity with adequate insurace for both labor and public liability.

Payments: The driller shall advance and pay all costs and expenses in connection with drilling and probing. And the company shall pay in full on or before ten days after the driller delivers the bill for items up to the end of the month preceding delivery.

The following are the rates bid by the undersigned driller:

Drilling with Tri-con rotary air.

From	To	Per Foot
0 feet	300 feet	$ 1 50

Drilling with core barrel for between 2 and 3 inch size core:

0 feet	100 feet	$ 6 00
100 feet	200 feet	7 00
200 feet	300 feet	7 50

Water shall be hauled at 30¢ per mile of necessary water truck travel and $6 00 per hour of hauling time.

Date: MARCH 22, 1957.

Bidder The Fritz Erickson Mining Co
By Clyde C. Fritz Pres.
Address Box 365
Dove Creek, Colorado

The foregoing bid is subject to approval by the company and the specifications will be a part of the drilling contract.

MEMORANDUM

from

Silver Dollar Mining Co.

to

Corrine Drilling Co.
Box 402
Dove Creek, Colorado

March 23, 1957

Gentlemen:

Please add the following footages to the specifications sent to you in my letter of March 20th, which were inadvertently omitted:

"Rotary tricon air minimum 5,000 ft., maximum 25,000 feet. Rotary core minimum 0 ft., maximum 3190 ft."

Elmer E. Johnston
President

SPECIFICATIONS FOR DRILLING PROJECT

The Silver Dollar Mining Company, an Idaho corporation qualified to do business in Utah, P. O. Box 122, Spokane 10, Washington plans an exploration project with D.M.E.A. assistance on its unpatented lode claims on Fry Mesa in unsurveyed Sections 4, 5, 6, 7, 8, and 17, T. 37 S., R. 17 E., San Juan County, Utah, about 50 miles west of Blanding. Access to the property is by the White Canyon State Highway 45 miles west from Blanding, Utah to To-ko-chi canyon, about one mile west of the Owachomo Natural Bridge road, then 1.5 miles up this canyon along a dirt road onto the Mossback mesa, and then by dirt road northward about three miles onto the property where a network of bulldozer roads extend onto most of the claims.

You are invited to submit a bid on the drilling as specified below:

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RECEIVED MAR 29 1957

DATE	INITIALS	CODE

Nature of holes: Vertical from surface.

Kind of drilling: Rotary tricon air dry where possible, and wet where dry drilling not possible. Rotary core dry where feasible and wet where dry drilling not feasible.

Size of hole: Approximately 5 inches diameter.

Size of core: Between 2 and 3 inches diameter.

Depth of holes: Minimum 20 feet, maximum 300 feet. The company shall specify the approximate feet of depth for each hole and specify usually five feet into the Moenkopi and shall specify the interval to be drilled for core. The driller shall use approved methods and techniques in its drilling operations and make every effort to attain the depth designated by the company. But in the event unusual underground conditions make continued drilling of any hole impractical the driller shall have the right to stop the drilling of this hole and receive payment for depth already drilled in the hole.

Care of cuttings:

1. All drill cuttings, or as close to all as practical and satisfactory to the company representative, shall be recovered for each approximately $2\frac{1}{2}$ foot interval drilled.

2. Dry cuttings for each approximately $2\frac{1}{2}$ foot interval shall be stacked in individual piles in sequence of drilling, or when required by the company cuttings shall be sacked in sacks furnished by the company and marked and placed in rows in sequence of drilling, or when required by the company shall be split on a sample splitter furnished by the company and one-half stacked in rows in sequence of drilling and the other half sacked in sacks furnished by the company and marked and placed upon the samples stacked in rows in the sequence of drilling or placed in a container supplied by the company.

5. Wet cuttings shall be recovered for each approximately 2½ foot interval in containers provided by the driller, and after decanting the water shall be cared for in the same manner as dry samples.

Care of core: Cores shall be placed in containers provided by the company in the sequence of drilling, and the depth to the start and the bottom of each pull of core shall be marked in the container opposite the core from that depth.

Driller's log: The driller is to complete a log for delivery to the company representative before the drill moves to the next drill site. This log is to contain (1) number of hole, (2) date completed, (3) total depth of hole, (4) depth to Moenkopi, and (5) the interval of each kind of rock cut in the hole.

Probe of hole: The driller is to probe each hole at his own expense immediately after completion of the hole. Instrument to be used shall be a standard recording radiometric probe. Recording tape shall be marked with (1) the date completed, (2) number of hole, (3) scale on which probe was operated, (4) measured distance by probe cable from bottom of probe to top of hole.

Inspection of cuttings and core: The driller shall permit a representative of the company at any and all times to inspect the cuttings and/or core.

Date drilling to start: As soon as practicable if and after D.M.E.A. assistance contract is approved, probably in May or June.

Minimum rate at which drilling is to be done: Driller shall maintain a continuous operation of not less than 48 hours a week unless prevented by unusual conditions outside of the driller's control until project is completed or recessed after minimum drilling and upon failure to maintain continuous operation as specified, driller shall be subject to a penalty of $5.00 an hour for non-operative time less than 48 hours a week.

Driller may upon mutual agreement with the company representative operate a second drill on this project.

For any time lost by the driller through failure of the company to provide drill locations the company shall be subject to a penalty of $5.00 for each hour of time so lost.

Drill water supply: Water for drilling is not available at the property but is available from springs close to the main road within 15 to 20 miles. The driller shall haul the necessary drill water in equipment provided by himself at the price bid hereafter.

Drill sites: The company shall specify where holes are to be drilled and where natural sites and access thereto are inadequate it shall prepare a reasonable site and access.

Mobilization and demobilization: Driller shall move equipment to the project site and from the project site as well as from drill site to drill site at his own expense.

State and Federal regulations: The driller shall be an independent contractor and comply with all State and Federal regulations pertaining to his use of equipment and employment of labor upon the property and hold the company blameless from any damage caused by the driller's activity. To this end the driller shall cover his activity with adequate insurance for both labor and public liability.

Payments: The driller shall advance and pay all costs and expenses in connection with drilling and probing. And the company shall pay in full on or before ten days after the driller delivers the bill for items up to the end of the month preceding delivery.

The following are the rates bid by the undersigned driller:

Drilling with Tri-con rotary air.

From	To	Per Foot
0 feet	300 feet	$1.40

Drilling with core barrel for between 2 and 3 inch size core: → 2 7/8"

0 feet	100 feet	$
100 feet	200 feet	
200 feet	300 feet	3 75

all cores

Water shall be hauled at .06 cent per mile of necessary water truck travel and 2.00 per hour of hauling time.

Date: Mar 25, 1957.

Bidder Corona Drilling Co.
L. R. Finch

Address Box 402
Dove Creek Colo.

The foregoing bid is subject to approval by the company and the specifications will be a part of the drilling contract.

SILVER DOLLAR
Mining Company

W. 909 SPRAGUE
SPOKANE 4,
WASHINGTON

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DATE	INITIALS	CODE

February 22, 1957

Defense Minerals Exploration Administration
U. S. Dept. of the Interior
Interior Building
Washington, D. C.

Gentlemen:

We are enclosing herewith in quadruplicate application for exploration assistance from D.M.E.A. for uranium on our Fry Mesa property in the White Canyon district of San Juan County, Utah. Also for your information we are enclosing one copy of logs of holes drilled todate which need not be returned to us.

Yours truly,
SILVER DOLLAR MINING COMPANY

Elmer E. Johnston

Elmer E. Johnston, President

EEJ/wjc
Encls.

1956 DRILL HOLE LOGS

FRY MESA PROPERTY

SILVER DOLLAR MINING COMPANY

Hole No. 1. Collar Elev., 6705.0'. Total Depth, 388'. Poor Boy No. 1.

0' - 15'	White sandstone.
15' - 208'	Tan, red and gray mudstone.
208' - 210'	Light cream fine sandstone.
210' - 230'	Pink mudstone. 208' to 230' = 22' may be Shinarump.
230' - 238'	Pink conglomeratic sandstone.
238' - 241'	Gray sandstone. 230' to 241' = 11' Shinarump.
241' - 242'	Bleached mudstone. Top of Moenkopi (6464')
242' - 293'	Red, brown and pinkish mudstone.
293' - 303'	Tan-gray, very fine sandstone.
303' - 311'	Red mudstone.
311' - 316'	Pink, fine sandstone.
316' - 326'	Brown mudstone.
326' - 334'	Pink sandstone.
334' - 337'	Red mudstone.
337' - 388'	Pink, fine sandstone with red mudstone flakes.

Probe barren. Minor radiometric kicks.

Hole No. 2. Collar Elev., 6727.9'. Total Depth, 427'. North Star No. 7.

0' - 60'	Light gray fine sandstone.
60' - 228'	Red, brown and gray mudstone.
228' - 257'	Gray sandstone. 228' to 257' = 29' Shinarump.
257' - 300'	Brown, tan, and bleached mudstone. Top of Moenkopi (6471').
300' - 306'	White sandstone.
306' - 411'	Brown and tan mudstone.
411' - 416'	Buff fine sandstone.
416' - 427'	Brown mudstone.

Probe barren. Slight radiometric kicks.

Hole No. 3. Collar Elev., 6729'. Total depth, 414'. Poor Boy No. 3.

0' - 55'	Cream muddy sandstone.
55' - 58'	Tan fine sandy mudstone.
58' - 63'	Cream muddy sandstone.
63' - 135'	Brown and gray mudstone.
135' - 138'	Bleached fine muddy sandstone.
138' - 140'	Conglomeratic white sandstone, some lotite.
140' - 147'	White sandstone.
147' - 150'	Cream sandstone.
150' - 153'	Brownish gray muddy sandstone.

Encountered small water flow at 153' and cullings below were too muddy for recovery. Top of Moenkopi should be at about 240 feet. No radiometric kicks. Walls plastered with mud.

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DATE	INITIALS	CODE

Hole No. 4. Collar Elev., 6634.1'. Total Depth, 325'. Poor Boy No. 2.

0' - 153'	Red, brown, yellow and gray mudstone.
153' - 165'	Gray sandy mudstone.
165' - 175'	Tan muddy sandstone.
175' - 180'	Grayish-tan muddy conglomeratic sandstone.
180' - 185'	Brown muddy sandstone.
185' - 188'	Bleached muddy sandstone. 165' to 188' = 23' Shinarump.
188' - 193'	Partly bleached pinkish mudstone. Top of Moenkopi (6446').
193' - 239'	Brown and bleached mudstone.
239' - 247'	White sandstone.
247' - 270'	Brown mudstone.
270' - 283'	Pink muddy sandstone.
283' - 300'	Brown mudstone.
300' - 305'	Pink muddy sandstone.
305' - 325'	Brown mudstone.

Probe barren. Slight radiometric kicks in Shinarump.

Hole No. 5. Collar Elev., 6635.' Total Depth, 285'. North Star No. 8.

0' - 135'	Gray, red and brown mudstone.
135' - 138'	Brown mudstone with conglomeratic pebbles.
138' - 145'	Brown muddy sandstone.
145' - 147'	Tan muddy sandstone.
147' - 150'	Greenish white muddy sandstone.
150'- 152'	Gray-white coarse sandstone. 135' to 152' = 17' Shinarump.
152' - 153'	Bleached mudstone. Top of Moenkopi. (6483').
153' - 197'	Brown and tan mudstone.
197' - 199'	Partly bleached mudstone.
199' - 285'	Brown and buff mudstone.

Probe barren. Slight radiometric kicks.

Hole No. 6. Collar Elev., 6733.4'. Total Depth, 398'. Joker No. 1.

0' - 63'	Yellow to cream fine muddy sandstone.
63' - 95'	Red, brown and yellow mudstone.
95' - 125'	Gray muddy sandstone.
125' - 218'	Red, gray and tan-brown mudstone.
218' - 235'	Tan-gray fine muddy sandstone.
235' - 243'	Bleached gray-white fine muddy sandstone.
243' - 255'	Chocolate-tan muddy sandstone 218' to 255' = 37' Shinarump.
255' - 363'	Tan and brown mudstone. Top of Moenkopi (6478.4').

Probe barren. Fair radiometric kick at 252'.

Hole No. 7. Collar Elev. (not surveyed in). Total Depth, 100'. Joker No. 7.

0' - 30'	Brown, gray and purple mudstone.
30' - 50'	Gray sandstone. 20' Shinarump.
50' - 100'	Brown, pink, and red mudstone. Top of Moenkopi.

Probe barren. Small radiometric kick at 89' in Moenkopi.

Hole No. 8. Collar Elev. (not surveyed in). Total Depth, 30'. Joker No. 8.

0' - 27'	Gray mudstone and sandstone. Shinarump.
27' - 30'	Brown mudstone. Top of Moenkopi.

Probe barren.

Hole No. 9. Collar Elev., 6620.' Total Depth, 162'. Black Jack No. 2.

0' - 21'	Pink and white sandstone.
21' - 135'	Green, red, gray and pinkish mudstone.
135' - 143'	Red muddy sandstone.
143' - 148'	White sandstone.
148' - 158'	Conglomeratic sandstone. 135' to 158' = 23' Shinarump.
158' - 162'	Red mudstone. Top of Moenkopi (6462').

Probe barren. Log needle very sluggish should be reprobed.

Hole No. 10. Collar Elev., 6592.6'. Total Depth, 148'. Black Jack Nos.2 & 3.

0' - 20'	Cream sandstone.
20' - 111'	Yellow, red, gray and pink mudstone.
111' - 116'	White sandstone.
116' - 119'	Red sandstone. 111' to 119' = 8' upper Shinarump.
119' - 127'	Bleached light gray mudstone.
127' - 132'	Red mudstone. 119' to 132' = 13' Middle Shinarump.
132' - 142'	White sandstone. 132' to 142' = 10' Lower Shinarump.
142' - 143'	Bleached mudstone. Top of Moenkopi. (6450.6').
143' - 148'	Red mudstone.

117' - 117.5' = 1.5' of .10% Rad.

Hole No. 11. Collar Elev., 6581.0'. Total depth, 137'. Black Jack No. 3.

0' - 13'	Red sandstone.
13' - 108'	Red, gray, green and yellow mudstone.
108' - 123'	White sandstone.
123' - 126'	Gray sandstone with carbon.
126' - 131'	White coarse sandstone. 108' to 131' = 23' Shinarump.
131' - 133'	Bleached mudstone. Top of Moenkopi (6450.')
133' - 138'	Red mudstone.

125' to 127' = 2.0' of .50% Rad.

Hole No. 12. Collar Elev. 6559.7'. Total Depth, 101'. Black Jack No. 3.

0' - 40'	Red and gray mudstone.
40' - 50'	Gray mudstone and sandstone.
45' - 97'	Light gray sandstone and mudstone (not logged in detail) Probably 50' Shinarump.
97' - 101'	Brown mudstone. Top of Moenkopi (6463')

Probe without radiometric kicks.

Hole No. 13. Collar Elev. 6551.7'. Total Depth, 100'. Black Jack No. 3.

0' - 53'	Yellow, gray and tan mudstone.
53' - 59'	White sandstone. 53' to 59' = 6' Upper Shinarump.
59' - 65'	Tan mudstone. 59' to 65' = 6' Middle Shinarump.
65' - 78'	White sandstone, iron stain at top.
78' - 95'	Carbonacious sandstone with chalcopyrite and pyrite 65' to 95' = 30' Lower Shinarump.
95' - 100'	Brown mudstone. Top of Moenkopi. (6456.7').

87' to 97' probe shows minor radiometric kicks.

Hole No. 14. Collar Elev., 6526.3'. Total Depth, 72'. Black Jack No. 3.

0' - 37'	Brown, gray, red and yellow mudstone.
37' - 50'	White sandstone some rusty specks.
50' - 52'	White sandstone with carbon.
52' - 55'	Mixed sandstone and mudstone with carbon.

(Hole No. 14 continued Page 4).

Hole No. 14 (Continued).

55' - 60'	White sandstone slightly rusty with some carbon.
60' - 65'	Muddy carbonaceous sandstone with chalcopyrite. 37' to 65' = 28' Shinarump.
65' - 67'	Bleached mudstone. Top of Moenkopi. (6461.3').
67' - 72'	Brown mudstone.

Radiometric kicks at 58', 64' and 66'.

Hole No. 15. Collar Elev., 6528.7'. Total Depth, 68'. Black Jack No. 3.

0' - 30'	Red, yellow and gray mudstone.
30' - 38'	Gray to cream sandy conglomerate.
38' - 40'	Gray-white sandstone.
40' - 43'	Lavender fine muddy sandstone.
43' - 48'	Pink to white sandy conglomerate.
48' - 58'	White to cream sandstone.
58' - 63'	Gray muddy sandstone with carbon. 30' to 63' = 33' Shinarump.
63' - 64'	Gray bleached mudstone. Top of Moenkopi. (6465.7').
64' - 68'	Red mudstone.

Probe barren. No radiometric kicks.

Hole No. 16. Collar Elev., 6501.7'. Total Depth, 37'. Black Jack No. 4.

0' - 16'	Buff-gray mudstone. Middle Shinarump or Chinle.
16' - 30'	White to cream and cream-gray sandstone.
30' - 33'	Orange tan sandstone. 16' to 33' = 17' Lower Shinarump.
33' - 37'	Red mudstone, bleached top. Top of Moenkopi. (6468.7').

Probe barren. Slight radiometric kick at 16'.

Hole No. 17. Collar Elev., 6503.6'. Total Depth, 36'. Black Jack No. 4.

0' - 22'	Yellow, pink, green and buff mudstone. Middle Shinarump or Chinle.
22' - 32'	White, cream and tan sandstone, some carbon. 10' Lower Shinarump.
32' - 33'	Bleached mudstone. Top of Moenkopi. (6471.6').
33' - 36'	Red mudstone.

Probe barren. Slight radiometric kick at 32'.

Hole No. 18. Collar Elev., 6505.'. Total Depth, 38'. Black Jack No. 4.

0' - 15'	Buff-gray mudstone.
15' - 18'	Light gray sandstone.
18' - 20'	Buff mudstone.
20' - 23'	Cream-gray sandstone.
23' - 25'	Medium gray mudstone.
25' - 30'	White sandstone and conglomerate.
30' - 34'	Tan-gray sandstone. 15' to 34' = 19' Shinarump.
34' - 35'	Bleached mudstone. Top of Moenkopi. (6471').
35' - 38'	Brown mudstone.

Probe barren. Slight radiometric kick at 33'.

Hole No. 19. Collar Elev. 6508.'. Total Depth, 40'. Black Jack No. 4.

0' - 2'	Red mudstone.
2' - 13'	Cream to white coarse sandstone.
13' - 15'	Tan muddy sandstone.
15' - 27'	Gray to greenish yellow mudstone.
27' - 37'	White sandstone. 2' to 37' = 35' Shinarump.
37' - 38'	Bleached mudstone. Top of Moenkopi (6471').
38' - 40'	Red mudstone.

Probe barren. Slight radiometric kick at 34'.

Hole No. 20. Collar Elev., 6508.' Total Depth, 40'. Black Jack No. 4.

0' - 23'	Brown, orange and pink mudstone.
23' - 28'	Pink muddy sandstone.
28' - 32'	Gray mudstone.
33' - 38'	Cream to tan sandstone. 23' to 38' = 15' Shinarump.
38' - 40'	Red mudstone. Top of Moenkopi. (6470.').

Probe barren. Slight radiometric kick at 36'.

Hole No. 21. Collar Elev., 6591.7' Total Depth, 146'. Black Jack No. 2.

0' - 35'	Cream sandstone.
35' - 55'	Gray mudstone.
55' - 58'	Conglomerate.
58' - 107'	Gray and yellow mudstone.
107' - 120'	Cream sandstone.
120' - 127'	Light gray mudstone.
127' - 142'	White sandstone, some carbon. 107' to 142' = 35' Shinarump.
142' - 146'	Brown mudstone. Top of Moenkopi. (6449.7').

138' to 139' = .01% Rad.

Hole No. 22. Collar Elev., 6591.' Total Depth, 145'. Black Jack No. 3.

0' - 27'	Light gray sandstone.
27' - 103'	Red, yellow and gray mudstone.
103' - 111'	White sandstone.
111' - 118'	Tan coarse sandstone.
118' - 123'	Gray mudstone.
123' - 141'	White Sandstone. 103' to 141' = 38' Shinarump.
141' - 145'	Red mudstone. Top of Moenkopi. (6450').

108.5' to 109.' = .01% Rad.

Hole No. 23. Collar Elev., 6593.9' Total Depth, 140'. Black Jack No. 3.

0' - 8'	Pink sandstone.
8' - 105'	Red, yellow and gray mudstone.
105' - 114'	White to tan sandstone.
114' - 116'	Gray conglomeratic mudstone.
116' - 119'	White conglomeratic sandstone.
119' - 127'	Light gray muddy sandstone.
127' - 129'	Pink mudstone.
129' - 132'	Light gray fine muddy sandstone, some carbon.
132' - 135'	White sandstone. 105 to 135' = 30' Shinarump.
135' - 137'	Light gray bleached mudstone. Top of Moenkopi (6458.9').
137' - 140'	Red mudstone.

114' to 116' = 2' of .01% Rad. 128' to 129' = 1' of .01% Rad.

Hole No. 24. Collar Elev., 6586.9' Total Depth, 143'. Black Jack No. 2.

0' - 10'	White sandstone.
10' - 100'	Red, gray, green and yellow mudstone.
100' - 105'	Pink-gray sandstone.
105' - 115'	Gray bleached sandy mudstone.
115' - 123'	Gray bleached fine sandstone.
123' - 138'	White medium to coarse sandstone. 100' to 138'=38'Shinarump.
138' - 143'	Red mudstone. Top of Moenkopi (6448.9').

135.5' to 136' = .5' of .03% Rad.

Hole No. 25. Collar Elev., 6581.0'. Total Depth, 140'. Black Jack No. 2.

0' - 20'	White sandstone.
20' - 115'	Gray, green and red mudstone.
115' - 127'	Gray sandstone.
127' - 130'	Gray carbonaceous sandstone.
130' - 135'	Gray sandstone. 115' to 135' = 20'+ Shinarump.
135' - 137'	Bleached mudstone. Top of Moenkopi. (6446.').
137' - 140'	Red mudstone. (This hole not logged in detail).

133' - 133.5' = .5' of .01% Rad.

Hole No. 26. Collar Elev., 6563.5'. Total Depth, 122'. Black Jack No. 2.

0' - 90'	Red, green, yellow and gray mudstone.
90' - 118'	Gray, cream and dark gray carbonaceous sandstone. 28' Shinarump.
118' - 119'	Bleached mudstone. Top of Moenkopi (6445.5').
119' - 122'	Red mudstone.

110.5' to 111.' = .5' of .36% Rad.

Hole No. 27. Collar Elev., 6523'. Total Depth, 54'. Black Jack No. 4.

0' - 7'	Buff-gray muddy sandstone.
7' - 32'	Blue, gray, tan and red mudstone.
32' - 42'	Pink, white and orange sandstone.
42' - 50'	Gray sandy mudstone, carbon at bottom. 32' to 50' = 18' Shinarump
50' - 54'	Red mudstone. Top of Moenkopi. (6473').

Probe barren. Slight radiometric kicks at 6' and 10'.

Hole No. 28. Collar Elev., 6533.7'. Total Depth, 60'. Black Jack No. 4.

0' - 37'	Gray, tan, red, and pink mudstone.
37' - 45'	White and tan sandstone.
45' - 50'	Bleached muddy sandstone.
50' - 54'	Orange sandstone. 37' to 54' = 17' Shinarump.
54' - 55'	Bleached mudstone. Top of Moenkopi. (6479.7').
55' - 60'	Brown mudstone.

Probe barren. Slight radiometric kicks at 42' and 53'.

Hole No. 29. Collar Elev., 6532.2'. Total Depth, 60'. Black Jack No. 4.

0' - 28'	Gray and tan mudstone.
28' - 43'	White sandstone.
43' - 46'	Red-gray conglomerate.
46' - 49'	Light gray muddy sandstone.
49' - 54'	Bleached mudstone.
54' - 57'	Light gray muddy conglomerate. 28' to 57' = 29' Shinarump.
57' - 60'	Red mudstone. Top of Moenkopi. (6475.2').

51' - 51.5' = .5' of .01% Rad.

Hole No. 30. Collar Elev., 6533.7'. Total Depth, 60'. Black Jack No. 4.

0' - 45'	Gray and tan mudstone.
45' - 48'	Gray muddy conglomerate
48' - 54'	Orange coarse sandstone. 43' to 50' = 7' Shinarump.
54' - 57'	Bleached mudstone. Top of Moenkopi. (6479.7').
57' - 60'	Brown mudstone.

42' to 42.5' = .5' of .01% Rad.

Hole No. 31. Collar Elev., 6533.4'. Total depth, 60'. Black Jack No. 4.

0' - 38'	Red, green, orange and gray mudstone.
38' - 39'	Dark gray carbonaceous mudstone.
39' - 43'	Rusty-tan muddy sandstone.
43' - 51'	Cream to reddish cream sandstone. 38' to 51' = 13' Shinarump.
51' - 54'	Gray partly bleached mudstone. Top of Moenkopi (6482.4').
54' - 60'	Red mudstone.

Probe barren. Radiometric kicks at 29', 35' and 40'.

Hole No. 32. Collar Elev., 6519.1'. Total depth, 54'. Black Jack No. 4.

0' - 17'	Gray mudstone.
17' - 34'	Cream sandstone.
34' - 40'	Tan and reddish gray mudstone.
40' - 49'	Cream and tan sandstone. 17' to 49' = 32' Shinarump
49' - 50'	Bleached mudstone. Top of Moenkopi (6470.1').
50' - 54'	Brownish-red mudstone.

42.5' to 43' = .5' of .01% Rad.

Hole No. 33. Collar Elev., 6519.8'. Total depth, 56'. Black Jack No. 4.

0' - 7'	Gray and black mudstone.
7' - 30'	White, cream and pinkish sandstone.
30' - 35'	Gray-brown mudstone.
35' - 51'	Orange, white and tan sandstone. 7' to 51' = 44' Shinarump.
51' - 56'	Brown mudstone. Top of Moenkopi. (6468.8').

49.5' to 50' = .5' of .03% Rad. 40' to 40.5' = .5' of .01% Rad.

Hole No. 34. Collar Elev., 6527.5'. Total depth, 60'. Black Jack No. 4.

0' - 22'	Red and bleached mudstone.
22' - 37'	Tan sandstone.
37' - 39'	Gray mudstone.
39' - 56'	Tan sandstone. 22' to 56' = 34' Shinarump.
56' - 58'	Bleached mudstone. Top of Moenkopi. (6469.5').
58' - 60'	Red-tan mudstone.

37.5' to 38.5' = 1.0' of .04% Rad.

Hole No. 35. Collar Elev., 6538.5'. Total depth, 72'. Black Jack No. 4.

0' - 35'	Red-gray to red mudstone.
35' - 55'	Cream sandstone with reddish top.
55' - 57'	Gray mudstone.
57' - 66'	Cream conglomeratic sandstone.
66' - 68'	Tan sandstone. 35' to 68' = 33' Shinarump.
68' - 69'	Bleached mudstone. Top of Moenkopi. (6470.5').
69' - 72'	Red mudstone.

64.' to 64.5' = .5' of .02% Rad.

Hole No. 36. Collar Elev., 6578.7'. Total depth, 130'. Black Jack No. 2.

0' - 20'	Cream sandstone.
20' - 114'	Yellow, gray, red, pink and green mudstone.
114' - 117'	White coarse sandstone. 114' - 117' = 3' Shinarump.
117' - 122'	Brown mudstone. Top of Moenkopi. (6461.7').
122' - 125'	Bleached sandy mudstone.
125' - 130'	Red mudstone.

108' to 108.5' = .5' of .01% Rad.

Hole No. 37. Collar Elev., 6586.5'. Total depth, 140'. Black Jack No. 3.

0' - 109'	Yellow, red and gray mudstone.
109' - 114'	Cream coarse sandstone.
114' - 117'	Medium-dark gray coarse carbonaceous sandstone.
117' - 132'	White medium-coarse sandstone.
132' - 135'	Coarse conglomeratic sandstone. 109' to 135' = 26' Shinarump.
135' - 140'	Red mudstone. Top of Moenkopi. (6451.5').

122' to 122.5' = .5' of .02% Rad. 127.5' to 128.5' = 1.' of .03% Rad.

Hole No. 38. Collar Elev., 6538.1'. Total depth, 98'. Black Jack No. 2.

0' - 55'	Red and green mudstone.
55' - 73'	White sandstone.
73' - 80'	Gray carbonaceous mudstone.
80' - 90'	Gray carbonaceous sandstone. 55' to 90' = 35' Shinarump.
90' - 95'	Red mudstone. Top of Moenkopi. (6448.1').

Poor probe record.

Hole No. 39. Collar Elev., 6407.4'? Total depth, 22.5'. Black Jack No. 17.

0' - 5'	Tan sandstone.
5' - 13'	White Sandstone.
13' - 18'	Red partly bleached muddy sandstone. 0' to 18' = 18'+ Shinarump.
18' - 20'	Bleached mudstone. Top of Moenkopi. (6389.4').
20' - 27'	Red mudstone.

14.5' to 15.' = .5' of .01% Rad.

Hole No. 40. Collar Elev., 6412.1'? Total depth, 18'. Black Jack No. 17.

0' - 12'	Light gray, yellow and white sandstone.
12' - 14'	Orange conglomerate. 0' to 14' = 14'+ Shinarump.
14' - 15'	Bleached mudstone. Top of Moenkopi. (6398.1').
15' - 18'	Red mudstone.

13.5' to 14.' = .5' of .01% Rad.

Hole No. 41. Collar Elev., 6412.2'? Total depth, 17'. Black Jack No. 17.

0' - 8'	White sandstone.
8' - 10'	White conglomeratic sandstone.
10' - 12'	Bleached muddy sandstone. 0' to 12' = 12+' Shinarump.
12' - 17'	Red mudstone. Top of Moenkopi. (6400.2').

12.0' to 12.5' = .5' of .01% Rad.

Hole No. 42. Collar Elev., 6411.7'? Total depth, 16'. Black Jack No. 17.

0' - 8'	White sandstone.
8' - 11'	Bleached muddy sandstone. 0' to 11' = 11'+ Shinarump.
11' - 16'	Red mudstone. Top of Moenkopi. (6400.7').

14.0' to 14.5' = .5' of .01% Rad.

Hole No. 43. Collar Elev., 6414.3'? Total depth, 15'. Black Jack No. 18.

0' - 2'	Light gray sandstone.
2' - 10'	Bleached coarse conglomerate 0' to 10' = 10'+ Shinarump.
10' - 15'	Red mudstone. Top of Moenkopi. (6404.3').

Probe barren.

Hole No. 44. Collar Elev., 6415.4'? Total depth, 14'. Black Jack No. 18.

0' - 9'	White sandstone. 9'+ Shinarump.
9' - 14'	Red mudstone. Top of Moenkopi. (6406.4').

Not probed to date.

Hole No. 45. Collar Elev., 6474.2'. Total depth, 30'. Black Jack No. 2.

0' - 4'	Overburden.
4' - 7'	Red sandstone.
7' - 15'	Gray-tan mudstone.
15' - 22'	White sandstone.
22' - 25'	Gray carbonaceous mudstone. 4' to 25' = 21'+ Shinarump.
25' - 30'	Red mudstone. Top of Moenkopi. (6449.2').

Probe barren. Small radiometric kick at 22'.

Hole No. 46. Collar Elev., 6470.3'. Total depth, 29'. Black Jack No. 2.

0' - [illegible]	Overburden.
5' - [illegible]	Mudstone.
14' - 23'	White sandstone. 5' to 23' = 18'+ Shinarump.
23' - 24'	Bleached mudstone. Top of Moenkopi. (6447.3').
24' - 29'	Red mudstone.

Probe barren. Radiometric kicks at 21', 23' and 25'.

Hole No. 47. Collar Elev., 6468.' Total depth, 30'. Black Jack No. 7.

0' - 5'	Overburden.
5' - 10'	Gray mudstone.
10' - 23'	White sandstone. 5' to 23' = 18'+ Shinarump.
23' - 24'	Bleached mudstone. Top of Moenkopi. (6445.').
24' - 30'	Red mudstone.

17' to 18' = 1.' of .01% Rad. Radiometric kicks at 21' and 24'.

Hole No. 48. Collar Elev., 6470.7'. Total depth, 34'. Black Jack No. 7.

0' - 5'	Overburden.
5' - 17'	White sandstone.
17' - 22'	Gray mudstone.
22' - 24'	Cream sandstone.
24' - 28'	Cream conglomeratic sandstone. 5' to 28' = 23'+ Shinarump.
28' - 29'	Bleached mudstone. Top of Moenkopi (6442.7').
29' - 34'	Red mudstone.

Probe barren. Radiometric kick at 25'.

Hole No. 49. Collar Elev., 6466.8'. Total depth, 34'. Black Jack No. 7.

0' - 9'	Gray-brown mudstone.
9' - 24'	Cream coarse sandstone.
24' - 31'	Dark gray carbonaceous mudstone. 9' to 31' = 22'+ Shinarump.
31' - 35'	Red mudstone. Top of Moenkopi. (6435.8').

28' to 28.5' = .5' of .01% Rad.

Hole No. 50. Collar Elev., 6449.9'. Total depth, 45'. Black Jack No. 9.

0' - 2'	Overburden.
2' - 14'	Gray sandstone.
14' - 31'	Gray and brown mudstone.
31' - 35'	Yellow sandstone. 2' to 35' = 33'(+?) Shinarump.
35' - 36'	Bleached mudstone. Top of Moenkopi (6414.9').
36' - 45'	Red mudstone.

Probe barren. Radiometric kick at 36'.

Hole No. 51. Collar Elev., 6470.6'. Total depth, 40'. Black Jack No. 1.

0' - 21'	Yellow, gray and red mudstone.
21' - 28'	Cream sandstone.
28' - 30'	Very coarse red sandstone 21' to 30' = 9'(+?) Shinarump.
30' - 40'	Red and bleached mudstone. Top of Moenkopi. (6440.6).

17' to 20' = 3' of .01% Rad.

Hole No. 52. Collar Elev., 6461.1'. Total depth, 50'. Black Jack No. 9.

0' - 8'	Orange, tan and cream mudstone.
8' - 23'	Red muddy sandstone.
23' - 27'	Light gray sandstone.
27' - 43'	White sandstone. 8' to 43' = 35' Shinarump.
43' - 50'	Red mudstone. Top of Moenkopi (6418.1').

Probe barren. Radiometric kick at 40'.

Hole No. 53. Collar Elev., 6464.0'. Total depth, 40'. Black Jack No. 9.

0' - 17'	Mudstone.
17' - 25'	Gray sandstone.
25' - 30'	Gray mudstone.
30' - 35'	Cream conglomeratic sandstone. 17' to 35' = 18'(+?)Shinarump.
35' - 36'	Bleached mudstone. Top of Moenkopi (6429.').
36' - 40'	Brown mudstone.

Probe barren. Radiometric kicks at 26' and 33'.

Hole No. 54. Collar Elev., 6522.3'. Total depth, 70'. Black Jack No. 3.

0' - 45'	Gray and red mudstone.
45' - 60'	Gray sandstone.
60' - 64'	Medium dark gray sandstone with carbon. 45' to 64' = 19' Shinarump.
64' - 70'	Brown mudstone. Top of Moenkopi (6458.3').

62' to 64' = 2.' of .01% Rad.

Hole No. 55. Collar Elev., 6522.0'. Total depth, 70'. Black Jack No. 2.

0' - 5'	Overburden.
5' - 13'	Light gray sandstone.
13' - 47'	Green, red and gray mudstone.
47' - 57'	Medium gray sandstone.
57' - 62'	Light gray sandstone.
62' - 65'	Dark gray sandstone with carbon 47' to 65' = 18' Shinarump.
65' - 70'	Brown mudstone. Top of Moenkopi (6457.0').

Probe barren.

Hole No. 56. Collar Elev., 6533.6'. Total depth, 95'. Black Jack No. 2.

0' - 63'	Gray and orange mudstone.
63' - 73'	Medium gray sandstone.
73' - 80'	Medium dark gray mudstone.
80' - 85'	Medium dark gray sandstone with carbon 63' - 85' = 22' Shinarump.
85' - 89'	Bleached mudstone. Top of Moenkopi (6448.6').
89' - 95'	Red mudstone.

68.5' to 69.0' = .5% of .053% Rad.

Hole No. 57. Collar Elev., 6522.1'. Total depth, 85'. Black Jack No. 2.

0' - 72'	Gray, red, and yellow mudstone.
72' - 74'	Medium gray sandstone.
74' - 77'	Bleached sandstone. 72' to 77' = 5' Shinarump.
77' - 79'	Bleached mudstone. Top of Moenkopi (6445.1').
79' - 85'	Red mudstone.

Probe barren.

Hole No. 58. Collar Elev., 6522.6'. Total depth, 95'. Black Jack No. 2.

0' - 62'	Gray, red, orange and gray mudstone.
62' - 64'	Orange mudstone.
64' - 71'	Light gray mudstone.
71' - 83'	Light gray sandstone. 71' to 83' = 12' Shinarump.
83' - 84'	Bleached mudstone. Top of Moenkopi (6439.6').
84' - 95'	Red mudstone.

82.5' to 84.5' = 2.0' of .02% Rad.

Hole No. 59. Collar Elev., 6514.5'. Total depth, 90'. Black Jack No. 1.

0' - 55'	Gray and red mudstone.
55' - 75'	Light gray sandstone.
75' - 80'	Yellow-orange sandstone.
80' - 82'	Bleached sandstone. 55' to 82' = 27' Shinarump.
82' - 83'	Bleached mudstone. Top of Moenkopi (6432.5').
83' - 90'	Red mudstone.

76' to 77' = 1.0' of .01% Rad.

Hole No. 60. Collar Elev., 6574.1'. Total depth, 135'. Black Jack No. 2.

0' - 74'	Undifferentiated Chinle.
74' - 75'	Orange mudstone.
75' - 105'	Medium gray mudstone.
105' - 127'	Light gray sandstone. 22' Shinarump.
127' - 135'	Red mudstone. Top of Moenkopi. (6447.1').

128' to 129.5' = 1.5' of .02% Rad.

Hole No. 61. Collar Elev., 6562.4'. Total depth, 125'. Black Jack No. 2.

0' - 72'	Gray, red and orange mudstone.
72' - 97'	Light gray mudstone.
97' - 110'	Light gray sandstone.
110' - 116'	Dark gray high carbon sandstone. 97' to 116' = 19' Shinarump.
116' - 125'	Red mudstone. Top of Moenkopi (6446.4').

115' to 116' = 1' of .78% Rad.

Hole No. 62. Collar Elev. 6538.3'. Total depth, 80'. Black Jack No. 2.

0' - 55'	Orange, gray, red and yellow mudstone.
55' - 76'	Medium to light gray sandstone 21' Shinarump.
76' - 80'	Red mudstone. Top of Moenkopi. (6462.3').

71' to 74' = 3' of .01% Rad.

Hole No. 63. Collar Elev., 6605.3'. Total depth, 140'. North Star No. 9.

0' - 67'	Red, gray and brown mudstone.
67' - 72'	Cream fine sandstone
72' - 95'	Red, gray and yellow mudstone.
95' - 107'	White sandstone.
107' - 115'	Cream sandstone.
115' - 117'	Cream sandy conglomerate.
117' - 122'	Cream muddy sandstone.
122' - 132'	Cream sandstone. 95' to 132' = 37' Shinarump.
132' - 140'	Yellow-brown mudstone. Top of Moenkopi. (6473.0')

Active probe needle from 77' to 135' but no prominent kicks.

Hole No. 64. Collar Elev., 6559.'. Total depth, 115'. Black Jack No. 2.

0' - 95'	Undifferentiated Chinle.
95' - 98'	Cream sandstone.
98' - 104'	Dark gray sandstone with carbon. 95' to 104' = 9' Shinarump.
104' - 107'	Bleached mudstone. Top of Moenkopi. (6455').
107' - 115'	Red mudstone.

Probe barren. Radiometric kick at 99'.

Hole No. 65. Collar Elev. 6559.9'. Total depth, 120'. Black Jack No. 2.

0' - 80'	Undifferentiated Chinle.
80' - 110'	Medium to light gray sandstone.
110' - 111'	Bleached sandstone. 80' to 111' = 31' Shinarump.
111' - 113'	Bleached mudstone. Top of Moenkopi. (6450').
113' - 120'	Brown mudstone.

111' to 113' = 2' of .01% Rad.

Hole No. 66. Collar Elev., 6571.5'. Total depth, 140'. Black Jack No. 2.

0' - 92'	Undifferentiated Chinle.
92' - 94'	Dark gray sandy mudstone with carbon.
94' - 102'	Brown-cream mudstone.
102' - 117'	Muddy sandstone.
117' - 130'	Light gray sandstone. 102' to 130' = 28' Shinarump.
130' - 140'	Red mudstone. Top of Moenkopi (6441.5').

128.5 to 131' = 2.5' of .016% Rad.

Hole No. 67. Collar Elev., 6583.3'. Total depth, 135'. Black Jack No. 2.

0' - 25'	Light gray and tan sandstone.
25' - 92'	Green, red, gray, brown and tan mudstone.
92' - 105'	Gray mudstone.
105' - 108'	Gray coarse sandstone.
108' - 110'	Bleached sandstone.
110' - 113'	Red sandstone.
113' - 118'	Gray to pink conglomerate. 105' to 118' = 13' Shinarump.
118' - 125'	Light brown mudstone. Top of Moenkopi. (6465.3').
125' - 127'	Bleached mudstone.
127' - 135'	Red mudstone.

96' to 99' = 3' of .01% Rad.

Hole No. 68. Collar Elev., 6581.9'. Total depth, 130'. Black Jack No. 2.

0' - 18'	Light buff sandstone.
18' - 84'	Green, red, gray, and brown mudstone.
84' - 87'	Conglomerate.
87' - 110'	Tan, gray and buff sandstone.
110' - 111'	Gray mudstone.
111' - 115'	Conglomerate. 84' to 115' = 31' Shinarump.
115' - 122'	Partly bleached mudstone. Top of Moenkopi. (6467').
122' - 130'	Red mudstone.

87' to 89' = 2' of .01% Rad. Strong radiometric kick at 111'.

Hole No. 69. Collar Elev., 6594.6'. Total depth, 135'. Black Jack No. 2.

0' - 17'	Gray sandstone.
17' - 103'	Tan, red, green, gray and yellow mudstone.
103' - 105'	Dark gray sandstone.

(Hole No. 69 Continued on Page 13).

Hole No. 69 Continued from Page No. 12).

105' - 118'	Light gray fine sandstone.
118' - 124'	Dark gray sandstone. 103' to 124' = 21' Shinarump.
124' - 126'	Bleached mudstone. Top of Moenkopi (6470.6').
126' - 135'	Brown mudstone.

Probe barren. Radiometric kick at 121'.

Hole No. 70. Collar Elev., 6602.2'. Total depth, 140'. Black Jack No. 2.

0' - 104'	Undifferentiated Chinle.
104' - 109'	Dark gray muddy sandstone.
109' - 111'	Black sandstone with carbon.
111' - 114'	Light gray sandstone.
114' - 116'	Cream fine sandstone with carbon.
116' - 122'	Cream fine sandstone.
122' - 125'	Light brown muddy sandstone 104' to 125' = 21' Shinarump.
125' - 132'	Gray mudstone. Top of Moenkopi. (6477.2').
132' - 140'	Brown mudstone.

110' to 111' = 1' of .018% Rad. 123.5' to 127.5' = 4' of .014% Rad.

Hole No. 71. Collar Elev., 6583.3'. Total depth, 140'. Black Jack No. 2.

0' - 50'	Gray, cream and buff sandstone.
50' - 104'	Gray, red, and yellow mudstone.
104' - 112'	Gray fine sandstone.
112' - 117'	Gray muddy sandstone.
117' - 120'	Light brown muddy sandstone.
120' - 125'	Red and gray mudstone.
125' - 130'	Gray sandstone. 104' to 130' = 26' Shinarump.
130' - 133'	Bleached mudstone. Top of Moenkopi. (6453.3').
133' - 140'	Brown mudstone.

116' to 118.5' = 2.5' of .02% Rad. Radiometric kicks at 99', 104' & 128'.

Hole No. 72. Collar Elev., 6590.1'. Total depth, 140'. Black Jack No. 3.

0' - 3'	Cream sandstone.
3' - 97'	Cream, red, lavender, buff and gray mudstone.
97' - 100'	Gray muddy sandstone.
100' - 113'	White sandstone.
113' - 115'	Gray sandy mudstone.
115' - 127'	Gray sandstone.
127' - 134'	White sandstone. 97' to 134' = 37' Shinarump.
134' - 140'	Brown mudstone. Top of Moenkopi (6456.1').

111' to 113.5' = 2.5' of .01% Rad. 126.5' to 127.5' = 1.0' of .01% Rad.
133' to 135' = 2.0' of .01% Rad.

Hole No. 73. Collar Elev., 6606.4'. Total depth, 155'. Black Jack No. 3.

0' - 10'	Mudstone.
10' - 28'	Red and gray sandstone.
28' - 105'	Gray mudstone.
105' - 108'	Brown mudstone.
108' - 118'	Buff and white sandstone.
118' - 125'	Pink muddy sandstone.
125' - 130'	Gray sandstone.
130' - 135'	Gray sandstone with carbon.
135' - 137'	Gray muddy sandstone.
137' - 146'	Gray sandstone. 108' to 146' = 38' Shinarump.
146' - 148'	Bleached mudstone. Top of Moenkopi (6460.4').
148' - 155'	Red mudstone.

130.5' to 138.5' = 8' of .015% Rad. 145.5' to 151' = 5.5' of .015% Rad.

Hole No. 74. Collar Elev., 6597.3'. Total depth, 145'. Black Jack No. 3.

0' - 9'	Gray sandstone.
9' - 94'	Green, red, gray, yellow and lavender mudstone.
94' - 114'	White to tan sandstone.
114' - 125'	Light gray, pink and light gray sandstone.
125' - 126'	Gray mudstone.
126' - 139'	Gray sandstone. 94' to 139' = 45' Shinarump.
139' - 140'	Bleached mudstone. Top of Moenkopi. (6458.3').
140' - 145'	Red mudstone.

130' to 131.5' = 1.5' of .02% Rad. 134' to 139.5' = 5.5' of .02% Rad.

Hole No. 75. Collar Elev., 6595.1'. Total depth, 140'. Black Jack No. 3.

0' - 5'	Tan sandstone.
5' - 89'	Green, red, gray, brown and yellow mudstone.
89' - 110'	Pink and white sandstone.
110' - 127'	Gray sandstone.
127' - 130'	Cream sandstone.
130' - 135'	Gray sandstone with carbon 89' to 135' = 46' Shinarump.
135' - 136'	Bleached mudstone. Top of Moenkopi. (6460').
136' - 140'	Brown mudstone.

120.' to 128' = 8' of .01% Rad. 131.5' to 133' = 1.5' of .03% Rad.

Hole No. 76. Collar Elev., 6580.1'. Total depth, 125'. Black Jack No. 3.

0' - 70'	Red, brown, gray and yellow mudstone.
70' - 80'	Cream sandstone.
80' - 87'	White sandstone.
87' - 100'	Pink sandstone.
100' - 112'	Gray sandstone.
112' - 115'	Cream sandstone. 70' to 115' = 45' Shinarump.
115' - 118'	Bleached mudstone. Top of Moenkopi. (6465.1').
118' - 125'	Brown mudstone.

104' to 106' = 2' of .02% Rad. 109' to 112' = 3' of .01% Rad.
116' to 120.5' = 4.5' of .01% Rad.

Hole No. 77. Collar Elev., 6599.1'. Total depth, 140'. Black Jack No. 3.

0' - 22'	Red and buff sandstone.
22' - 91'	Red, gray, orange, yellow and brown mudstone.
91' - 96'	Black sandstone.
96' - 101'	Tan sandstone.
101' - 109'	Whiteand cream sandstone.
109' to 114'	Blue-gray sandstone.
114' - 121'	Light gray sandstone.
121' - 125'	Bleached sandstone. 91' to 125' = 34' Shinarump.
125' - 126'	Bleached mudstone. Top of Moenkopi (6474.1').
126' - 128'	Red mudstone.
128' - 140'	Bleached, brown, and pink mudstone.

106.5' to 113.5' = 7' of .01% Rad. 118' to 119.5' = 1.5' of .02% Rad.
127.5' to 129.5' = 2' of .01% Rad.

Hole No. 78. Collar Elev., 6442.3. Total depth, 40'. Black Jack No. 9.

0' - 9'	Cream sandstone.
9' - 20'	Gray coarse mudstone.
20' - 30'	Cream fine sandstone.
30' - 35'	Tan coarse conglomeratic sandstone 0' to 35' = 35'+Shinarump
35' - 36'	Bleached mudstone. Top of Moenkopi (6407.3').
36' - 40'	Red and bleached mudstone.

30.5' to 32' = 1.5% of .34% Rad.

HOLE NO. 79. Collar Elev., 6444.2'. Total depth, 47'. Black Jack No. 9.

0' - 8'	Cream sandstone.
8' - 17'	Gray-brown and gray mudstone.
17' - 34'	Light gray sandstone.
34' - 37'	Tan sandstone.
37' - 40'	Tan sandstone with carbon.
40' - 43'	Bleached mudstone. Top of Moenkopi (6404.2').
43' - 47'	Reddish cream sandy mudstone.

32' to 33' = 1' of 1.0% Rad. 33' to 34.5' = 1.5' of 1.8% Rad.
32' to 34.5' = 2.5' of 1.5% Rad.

Hole No. 80. Collar Elev. 6448.5'. Total depth, 35'. Black Jack No. 9.

0' - 14'	Cream-gray and tan fine sandstone.
14' - 19'	Brown mudstone.
19' - 20'	Light gray sandstone.
20' - 23'	Light brown sandy mudstone.
23' - 29'	Gray sandstone. 0' to 29' = 29'+ Shinarump.
29' - 35'	Red mudstone. Top of Moenkopi (6421.5').

Probe barren. Probe log has erratic radon gas characteristics.

Hole No. 81. Collar Elev., 6455.9'. Total depth, 45'. Black Jack No. 1.

0' - 23'	White, cream, tan, red, and buff sandstone.
23' - 26'	Gray mudstone.
26' - 30'	Tan sandstone.
30' - 38'	White sandstone.
38' - 40'	Orange sandstone. 0' to 40' = 40'+ Shinarump.
40' - 41'	Bleached mudstone. Top of Moenkopi. (6415.9').
41' - 45'	Brown mudstone.

34 to 38' = 4' of .03% Rad.

Hole No. 82. Collar Elev., 6462.5'. Total depth, 68'. Black Jack No. 1.

0' - 22'	Cream and tan sandstone.
22' - 30'	Red and gray mudstone.
30' - 48'	Gray to tan sandstone.
48' - 49'	Bleached sandstone.
49' - 50'	Tan coarse conglomeratic sandstone.
50' - 60'	Dark to light brown mudstone. Top of Moenkopi (6412.5').
60' - 63'	Cream sandstone.
63' - 68'	Brown mudstone.

48.5 to 50.3' = 1.8' of .02% Rad.

Hole No. 83. Collar Elev., 6474.0'. Total depth, 60'. Black Jack No. 1.

0' - 10'	Gray and tan sandstone.
10' - 13'	Brown mudstone.
13' - 31'	Tan, gray and tan sandstone.
31' - 37'	Brown mudstone.
37' - 39'	Tan sandstone.
39' - 44'	Gray-brown mudstone.
44' - 48'	Gray sandstone.
48' - 52'	Cream and tan sandstone.
52' - 54'	Bleached sandstone. 0' to 54' = 54' Shinarump.
54' - 55'	Bleached mudstone. Top of Moenkopi (6420.').
55' - 60'	Brown mudstone.

45' to 51' = 6' of .015% Rad.

Hole No. 84. Collar Elev., 6442.9'. Total depth, 75'. Black Jack No. 9.

0' - 9'	Cream and tan sandstone.
9' - 12'	Red and bleached mudstone.
12' - 18'	Cream and tan sandstone.
18' - 20'	Gray mudstone.
20' - 34'	Cream sandstone.
34' - 36'	Tan sandstone. 0' to 36' = 36'+ Shinarump.
36' - 37'	Bleached mudstone. Top of Moenkopi (6406.9').
37' - 46'	Brown sandy mudstone.
46' - 75'	Brown, bleached and tan mudstone.

23' to 36' = 13' of .03% Rad. Remainder of log has radon gas characteristics

Hole No. 85. Collar Elev., 6461.2'. Total depth 62'. Black Jack No. 1.

0' - 24'	White, pink, white and tan sandstone.
24' - 33'	Brown and gray mudstone.
33' - 47'	Cream sandstone.
47' - 49'	Dark cream sandstone.
49' - 51'	Bleached mudstone. Top of Moenkopi. (6412.2').
51' - 62'	Red mudstone.

48.5' to 50.0' = 1.5' of .01% Rad.

Hole No. 86. Collar Elev., 6469.5'. Total depth, 60'. Black Jack No. 1.

0' - 4'	Overburden.
4' - 9'	Yellow sandstone.
9' - 12'	Pink muddy sandstone.
12' - 30'	Pink, white and tan sandstone.
30' - 38'	Gray mudstone.
38' - 46'	Light tan and white sandstone.
46' - 53'	Cream coarse sandstone. 4' to 53' = 49'+ Shinarump.
53' - 60'	Brown mudstone. Top of Moenkopi (6416.5')

50' to 52' = 2' of .05% Rad.

Hole No. 87. Collar Elev., 6475.3'. Total depth, 65'. Black Jack No. 1.

0' - 20'	Gray mudstone. (Hillside slump?)
20' - 26'	Cream sandstone.
26' - 37'	Tan and gray mudstone.
37' - 53'	Cream sandstone.
53' - 56'	Tan sandstone. 20' to 56' = 36'(+?) Shinarump.
56' - 59'	Bleached mudstone. Top of Moenkopi. (6419.3').
59' - 65'	Red mudstone.

54.5' to 55.5' = 1.0' of .025% Rad.

Hole No. 88. Collar Elev., 6454.9'. Total depth, 60'. Black Jack No. 1.

0' - 12'	White and lavender sandstone.
12' - 15'	Red mudstone.
15' - 17'	Cream sandstone.
17' - 25'	Gray mudstone.
25' - 37'	White sandstone.
37' - 39'	Tan coarse sandstone. 0' to 39' = 39' Shinarump.
39' - 42'	Bleached mudstone. Top of Moenkopi. (6415.9').
42' - 51'	Brown and bleached mudstone.
51' - 55'	White sandstone.
55' - 60'	Brown mudstone.

36' to 37.5' = 1.5' of .01% Rad.

Hole No. 89. Collar Elev., 6457.' Total depth, 45'. Black Jack No. 1.

0' - 11'	White, lavender and tan sandstone.
11' - 24'	Tan, brown and gray mudstone.
24' - 28'	White sandstone.
28' - 34'	Cream sandstone.
34' - 35'	Bleached mudstone. Top of Moenkopi. (6423').
35' - 45'	Brown and lavender mudstone.

34' to 36.5' = 2.5' of .01% Rad.

Hole No. 90. Collar Elev., 6460.3'. Total depth, 53'. Black Jack No. 1.

0' - 6'	Red mud overburden.
6' - 8'	White sandstone.
8' - 24'	Lavender and gray mudstone.
24' - 33'	White sandstone.
33' - 41'	Cream sandstone.
41' - 43'	Tan sandstone. 6' - 43' = 37'+ Shinarump.
43' - 49'	Brown mudstone. Top of Moenkopi (6417.3').
49' - 51'	Bleached and brown mudstone.

34' to 36' = 2' of .03% Rad. 42' - 44.5' = 2.5' of .02% Rad.

Hole No. 91. Collar Elev., 6480.1' Total depth, 45'. Black Jack No. 1.

0' - 33'	Green and gray mudstone.
33' - 34'	Orange sandstone.
34' - 37'	Gray coarse sandstone. 33' - 37' = 4'(+?) Shinarump.
37' - 38'	Bleached mudstone. Top of Moenkopi (6443').
38' - 45'	Brown mudstone.

29.5' to 30.5' = 1' of .01% Rad.

Hole No. 92. Collar Elev., 6478'. Total depth, 65'. Black Jack No. 1.

0' - 5'	Overburden.
5' - 10'	Tan sandstone.
10' - 25'	Red mudstone.
25' - 31'	White sandstone.
31' - 40'	Pink, Yellow and gray mudstone.
40' - 58'	Cream, white and tan sandstone. 25' to 58' = 33'(+?) Shinarump.
58' - 59'	Bleached mudstone. Top of Moenkopi (6420').
59' - 65'	Brown mudstone.

42.5' to 50.5' = 8.0' of .07% Rad. 52.0' - 56.0' = 4' of .07% Rad.

Hole No. 93. Collar Elev., 6445.8'. Total depth, 55'. Black Jack No. 9.

0' - 14'	Tan, white and yellow sandstone.
14' - 24'	Gray mudstone.
24' - 35'	White sandstone.
35' - 42'	Buff sandstone. 0' to 42' = 42'= Shinarump.
42' - 45'	Bleached mudstone. Top of Moenkopi. (6403.8').
45' - 55'	Brown, bleached and brown mudstone.

34' to 36' = 2' of .05% Rad. or 29' to 39' = 10.' of .03% Rad.

Hole No. 94. Collar Elev., 6446.7'. Total depth, 49'. Black Jack No. 9.

0' - 13'	Cream sandstone and conglomerate.
13' - 18'	Gray mudstone.
18' - 37'	Yellow and white sandstone.
37' - 40'	Tan coarse conglomeratic sandstone. 0' to 40'=40' Shinarump/
40' - 42'	Bleached mudstone. Top of Moenkopi (6406.7').
42' - 49'	Brown, bleached and pink mudstone.

36.5' to 37.5' = 1' of .26% Rad.

Hole No. 95. Collar Elev., 6448.0'. Total depth, 50'. Black Jack No. 9.

0' - 14'	Cream, red, white, pink and tan sandstone.
14' - 22'	Gray mudstone.
22' - 25'	Tan coarse sandstone.
25' - 29'	White sandstone.
29' - 34'	Cream sandstone.
34' - 41'	Tan fine and coarse conglomeatic sandstone.
41' - 43'	Bleached mudstone. Top of Moenkopi (6407.0').
43' - 50'	Brown, bleached, and pink mudstone.

27' to 32' = 5' of .055% Rad. 36.5' to 38.5' = 2' of .04% Rad.
41' to 43' = 2.0' of .03% Rad.

Hole No. 96. Collar Elev., 6449.5'. Total depth, 50'. Black Jack No. 9.

0' - 5'	Brown mud overburden.
5' - 15'	Pink, white and cream sandstone.
15' - 21'	Orange and gray mudstone.
21' - 22'	Tan fine sandstone.
22' - 26'	Gray mudstone.
26' - 40'	White sandstone.
40' - 41'	Tan coarse sandstone. 5' to 41' = 36'(+?) Shinarump.
41' - 43'	Bleached mudstone. Top of Moenkopi. (6408.5').
43' - 50'	Brown and pink mudstone.

39' to 40' = 1' of .03% Rad.

Hole No. 97. Collar Elev., 6444.8'. Total depth, 46'. Black Jack No. 9.

0' - 8'	Cream sandstone.
8' - 19'	Red, yellow and gray mudstone.
19' - 29'	Cream and white sandstone.
29' - 37'	Yellow coarse sandstone.
37' - 39'	Coarse muddy sandstone. 0' to 39' = 39'+ Shinarump.
39' - 40'	Bleached mudstone. Top of Moenkopi. (6405.8').
40' - 46'	Brown, bleached, and brown mudstone.

30.5' to 31.5' = 1' of .23% Rad. 34.5 to 37' = 2.5' of .10% Rad.

Hole No. 98. Collar Elev., 6444.8'. Total depth, 46'. Black Jack No. 9.

0' - 12'	White and tan sandstone.
12' - 15'	Gray mudstone.
15' - 34'	Cream and white sandstone.
34' - 36'	Tan sandstone. 0' to 36' = 36'+ Shinarump.
36' - 37'	Bleached mudstone. Top of Moenkopi. (6408.8').
37' - 46'	Brown and pink mudstone.

35' to 36.5' = 1.5' of .03% Rad.

Hole No. 99. Collar Elev., 6444.4'. Total depth, 54'. Black Jack No. 9.

0' - 4'	Overburden.
4' - 10'	White sandstone.
10' - 24'	Red, tan and gray mudstone.
34' - 31'	White sandstone.
31' - 36'	Cream sandstone.
36' - 38'	Orange sandstone.
38' - 40'	Bleached mudstone. Top of Moenkopi. (6406.4').
40' - 54'	Brown, bleached, and brown mudstone.

32.5' to 33.5' = 1' of .30% Rad. 35' to 36.5' = 1.5' of .13% Rad.

Hole No. 100. Collar Elev., 6444.2'. Total depth, 54'. Black Jack No. 9.

0' - 10'	White sandstone.
10' - 24'	Brown and gray mudstone.
24' - 34'	White sandstone.
34' - 36'	Tan sandstone.
36' - 37'	Orange coarse sandstone. 0' to 37' = 37'+ Shinarump.
37' - 39'	Bleached mudstone. Top of Moenkopi (6407.2').
39' - 54'	Red, bleached and brown mudstone.

24.5 to 37' = 2.5' of .11% Rad.

Hole No. 101. Collar Elev., 6446.8'. Total depth, 57'. Black Jack No. 9.

0' - 10'	Cream sandstone
10' - 21'	Brown and gray mudstone.
21' - 27'	White sandstone.
27' - 29'	Cream sandstone with carbon.
29' - 36'	Cream and white sandstone.
36' - 40'	Tan coarse sandstone. 0' to 40' = 40'+ Shinarump.
40' - 42'	Bleached mudstone. Top of Moenkopi. (6406.8').
42' - 57'	Brown, bleached and brown mudstone.

38' to 39' = 1' of .06% Rad.

Hole No. 102. Collar Elev., 6447.1'. Total depth, 58'. Black Jack No. 9.

0' - 5'	Overburden.
5' - 13'	White and tan sandstone.
13' - 22'	Brown and blue-gray mudstone.
22' - 38'	White sandstone.
38' - 41'	Cream sandstone.
41' - 43'	Tan sandstone. 5' to 43' = 38'+ Shinarump.
43' - 44'	Bleached mudstone. Top of Moenkopi (6404.1').
44' - 58'	Red, bleached and brown mudstone.

37.5' to 39' = 1.5' of .03% Rad. 42' to 45' = 3' of .03% Rad.

Hole No. 103. Collar Elev., 6451.0'. Total depth, 59'. Black Jack No. 9.

0' - 7'	Tan and brown mud overburden.
7' - 14'	Cream sandstone.
14' - 16'	Red mudstone.
16' - 17'	Conglomerate.
17' - 25'	Gray and bleached mudstone.
25' - 39'	White sandstone.
39' - 42'	Cream coarse sandstone. 7' to 42' = 35'+ Shinarump.
42' - 44'	Bleached mudstone. Top of Moenkopi (6409.').
44' - 59'	Brown, bleached and brown mudstone.

41' to 42.5' = 1.5' of .04% Rad.

Hole No. 104. Collar Elev., 6450.2'. Total depth, 60'. Black Jack No. 9.

0' - 7'	Red mud overburden.
7' - 15'	Gray sandstone.
15' - 23'	Red and gray mudstone.
23' - 42'	Cream sandstone.
42' - 44'	Orange sandstone. 7' to 44' = 37'+ Shinarump.
44' - 49'	Bleached mudstone (carbon at top). Top of Moenkopi (6406.2').
49' - 60'	Brown, bleached and brown mudstone.

44' to 44.8' = .8' of 4.80% Rad.

Hole No. 105. Collar Elev., 6446.6'. Total depth, 57'. Black Jack No. 9.

0' - 3'	Overburden.
3' - 14'	White and cream sandstone.
14' - 27'	Gray mudstone and sandy mudstone.
27' - 38'	Cream sandstone.
38' - 39'	Orange sandstone. 3' to 39' = 36'+ Shinarump.
39' - 41'	Bleached mudstone. Top of Moenkopi. (6407.6').
41' - 57'	Red, bleached and brown mudstone.

37' to 38.5' = 1.5' of .06% Rad. 39' to 41' = 2.0' of .05% Rad.

Hole No. 106. Collar Elev., 6446.7'. Total depth 52'. Black Jack No. 9.

0' - 16'	Red and cream sandstone.
16' - 24'	Gray coarse mudstone.
24' - 40'	Cream sandstone.
40' - 43'	Tan fine to coarse sandstone. 0' to 43' = 43'+ Shinarump.
43' - 52'	Pink, red, and bleached mudstone. Top of Moenkopi (6403.7').

39' to 41' = 2' of .05% Rad.

Hole No. 107. Collar Elev., 6449.8'. Total depth, 55'. Black Jack No. 9.

0' - 3'	Overburden.
3' - 12'	Pink and cream sandstone.
12' - 14'	Tan coarse conglomerate.
14' - 21'	Yellow and gray mudstone.
21' - 37'	Cream sandstone.
37' - 42'	Tan sandstone. 3' to 42' = 39'+ Shinarump.
42' - 45'	Bleached mudstone. Top of Moenkopi (6407.8').
45' - 55'	Pink, red, and bleached mudstone.

33.5' to 35' = 1.5' of .06% Rad. 45' to 46.5' = 1.5' of .045% Rad.

Hole No. 108. Collar Elev., 6451.5'. Total depth, 52'. Black Jack No. 9.

0' - 2'	Overburden.
2' - 19'	Cream sandstone.
19' - 26'	Red and gray mudstone.
26' - 42'	White and cream sandstone.
42' - 47'	Orange coarse sandstone. 2' to 47' = 45'+ Shinarump.
47' - 49'	Bleached mudstone. Top of Moenkopi (6404.5').
49' - 52'	Pink mudstone.

43' to 44.5' = 1.5' of .31% Rad. 46.5' to 49' = 2.5' of .12% Rad.

Hole No. 109. Collar Elev., 6453.8'. Total depth, 52'. Black Jack No. 9.

0' - 2'	Overburden.
2' - 23'	Tan, white and light tan sandstone.
23' - 30'	Gray, light tan, and red mudstone.
30' - 43'	Cream coarse sandstone.
43' - 50'	Pink-cream conglomeratic sandstone.
50' - 52'	Pink muddy sand. Top of Moenkopi (6403.8').

44' to 46' = 2' of .08% Rad. 47.5' to 48.5' = 1' of .15% Rad.

Hole No. 110'. Collar Elev., 6449.8'. Total depth, 52'. Black Jack No. 9.

0' - 16'	Pink and cream sandstone partly conglomeratic.
16' - 26'	Red and gray mudstone.
26' - 38'	Buff and cream sandstone.
38' - 45'	Cream conglomeratic sandstone. 0' to 45' = 45'+ Shinarump.
45' - 46'	Bleached mudstone. Top of Moenkopi. (6404').

43' to 44' = 1' of .035% Rad.

Hole No. 111. Collar Elev., 6446.0'. Total depth, 48'. Black Jack No. 9.

0' - 5'	Overburden.
5' - 15'	Red and cream sandstone.
15' - 25'	Orange, brown and gray mudstone.
25' - 32'	White sandstone.
32' - 44'	Cream coarse sandstone.
44' - 46'	Bleached mudstone. Top of Moenkopi (6402').
46' - 48'	Pink and red mudstone.

38.5' to 42.5' = 4' of .22% Rad.

Hole No. 112 (A). Collar Elev., 6590. Total depth, 132'. North Star No. 8.

0' - 95'	Yellow, gray, bleached-gray, green and gray mudstone.
95' - 103'	Brown sandy mudstone.
103' - 116'	Red mudstone.
116' - 119'	Tan sandstone.
119' - 122'	Light gray sandstone.
122' - 127'	White sandstone. 116' to 127' = 11' Shinarump.
127' - 128'	Bleached mudstone. Top of Moenkopi. (6463').
128' - 132'	Red mudstone.

122.5' to 123.5' = 1' of .01% Rad.

Hole No. 113 (B). Collar Elev., 6582.4'. Total depth, 132'. Poor Boy No. 2.

0' - 30'	Cream sandstone.
30' - 33'	Cream mudstone.
33' - 48'	White sandstone.
48' - 51'	Brown mudstone.
51' - 54'	Gray sandstone
54' - 57'	Brown mudstone.
57' - 99'	Gray mudstone.
99' - 102'	Cream mudstone.
102' - 125'	Gray mudstone. 0' Shinarump.
125' - 132'	Red mudstone. Top of Moenkopi. (6557').

Hole No. 114 (C). Collar Elev., 6580.9'. Total depth, 130'. Poor Boy No. 2.

0' - 17'	Tan sandstone.
17' - 22'	Tan mudstone.
22' - 27'	Orange muddy sandstone.
27' - 113'	Green, red, and gray mudstone.
113' - 120'	Brown muddy sandstone.
120' - 127'	Bleached muddy sandstone. 113' to 127' = 14' Shinarump.
127' - 130'	Brown mudstone. Top of Moenkopi. 6454'.

124.5' to 126.5' = 2' of .015% Rad.

Hole No. 115 (D). Collar Elev., 6596.2'. Total depth, 150'. Poor Boy No. 2.

0' - 85'	Tan, cream, green, red, gray and red mudstone.
85' - 90'	Light gray to white conglomeratic sandstone.
90' - 95'	Light gray to brownish gray sandstone.
95' - 117'	Red, orange, gray, brown and gray mudstone.
117' - 120'	Lavender muddy sandstone.
120' - 127'	Red-tan mudstone.
127' - 130'	Tan mudstone.
130' - 137'	Red mudstone.
137' - 140'	Gray mudstone.
140' - 148'	Red mudstone. Top of Moenkopi (6556.2').
148' - 150'	Lavender mudstone.

142' to 143.5' = 1.5' of .013% Rad.

Hole No. 116 (E). Collar Elev., 6584.8'. Total depth, 147'. Poor Boy No.2.

0' - 5'	Overburden.
5' - 18'	Yellow and tan mudstone.
18' - 51'	Cream sandstone.
51' - 56'	Cream conglomeratic sandstone.
56' - 129'	Green, brown, gray, red, green, and gray mudstone.
129' - 134'	Light gray fine sandstone.
134' - 140'	Gray fine muddy sandstone.
140' - 142'	White muddy sandstone. 129' to 142' = 13' Shinarump.
142' - 143'	Bleached mudstone. Top of Moenkopi (6442.8').
143' - 147'	Red mudstone.

109' to 111' = 2' of .01% Rad. 140.5' to 142.5' = 2' of .01% Rad.

Hole No. 117 (F). Collar Elev., 6591.2'. Total depth, 159'. Poor Boy No.2.

0' - 90'	Recovery of cuttings too poor for logging.
90' - 147'	Green, gray, brown, gray and red mudstone.
147' - 150'	Grayish cream mudstone.
150' - 156'	Grayish white sandstone. 150' to 156' = 6' Shinarump.
156' - 159'	Red mudstone. Top of Moenkopi (6435').

127' to 157' = Barren, but active needle.

Hole No. 118 (G). Collar Elev., 6590'. Total depth, 161'. Poor Boy No. 2.

0' - 34'	Buff, cream, orange and tan sandstone.
34' - 40'	Cream conglomeratic sandstone.
40' - 46'	White sandstone.
46' -140'	Yellow, green, red, and gray mudstone.
140' - 149'	Light brown mudstone.
149' - 152'	Gray mudstone.
152' - 155'	Bleached muddy sandstone. 152' to 155' = 3' Shinarump.
155' - 161'	Red mudstone. Top of Moenkopi. (6435').

150' to 152' = 2' of .014% Rad.

Hole No. 119 (H). Collar Elev., 6527.3'. Total depth, 75'. Black Jack No.4.

0' - 5'	Gray-green sandstone.
5' - 20'	Red and tan mudstone.
20' - 34'	White and orange sandstone.
34' - 50'	Gray mudstone.
50' - 52'	White sandstone.
52' - 55'	Orange sandstone with minor carbon.
55' - 57'	Orange sandstone with black carbon.
57' - 60'	Orange sandstone. 20' to 60' = 40' Shinarump.
60' - 63'	Brown mudstone. Top of Moenkopi (6467').
63' - 75'	Pink sandy mudstone.

54.5' to 55.5' = 1' of .27% Rad.

Hole No. 120 (I). Collar Elev., 6523.7'. Total depth, 60'. Black Jack No. 4.

0' - 17'	Gray-tan mudstone.
17' - 33'	White sandstone.
33' - 40'	Gray mudstone.
40' - 47'	White sandstone.
47' - 51'	Tan sandstone. 17' to 51' = 34' Shinarump.
51' - 53'	Bleached mudstone. Top of Moenkopi (6472.7').
53' - 60'	Brown and pink mudstone.

47' to 48.5' = 1.5' of .04% Rad.

Hole No. 121. Collar Elev., 6451.2'. Total depth, 49.5'. Black Jack No. 9.

0' - 3'		Overburden.
3' - 8'		Gray mudstone.
8' - 16'		White sandstone.
16' - 23'		Red, yellow and gray mudstone.
23' - 30'		Tan and white sandstone.
30' - core	7.3'	coarse gray sandstone
	0.4'	orange-rust-pitted tan sandstone.
	5.0'	Rust pitted cream sandstone.
- 45'	0.3'	copper stained carbonaceous sandstone.
	13.0'	
45'	0.2'	orange mudstone. Top of Moenkopi. (6406. - 6405').
	1.3'	bleached mudstone
	0.4'	pink-gray fine sandstone
- 48'	1.9'	
48'	0.8'	Red mudstone.
- 49.5'	0.8'	

44' to 45' = 1' of .06% Rad.

Hole No. 122. Collar Elev., 6442.2'. Total depth, 40'. Black Jack No. 9.

0' - 2'		Overburden.
2' - 7'		White and tan sandstone.
7' - 14'		White and gray mudstone.
14' - 22'		Gray, white, tan, and cream sandstone.
22' - 25'		White conglomerate
25' -	1.0'	Rust pitted coarse sandstone.
	6.4'	White coarse sandstone with scattered rust pits.
	3.4'	Same above with increasing quantity of rust pits to about 50% at bottom. Has some carbon bands.
- 37'	10.8'	Core drill 25' to 37'.

37' - 40' Red mudstone. Rotary non core drilled. Top of Moenkopi (6406' - 6405').

Hole caved below 22'. Probe barren above 22'.

Hole No. 123. Collar Elev., 6445.8'. Total depth, 40'. Black Jack No. 9.

0' - 10'		Cream sandstone.
10' - 19'		Gray mudstone.
19' - 30'		White sandstone.
30' - core	2.0'	White coarse sandstone.
	4.0'	Same with gradually increasing rust pits to about 50%.
- 40'	0.4'	Greenish gray fine mudstone. Top of Moenkopi (6407).
	6.4'	Core recovered.

Heavy carbon bands in core from 30.' + 4.8' to +5.0'.
Scintillometer reading on core 30. +5.6' to +5.8' = .07% Rad.
Probe 31.5' to 33' = 1.5' of .54% Rad.

MF-103
(Revised April 1952)

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UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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. 4655
Metal or Mineral Uranium
Date Received 2-27-57
Estimated Cost $66,687.57
Participation (Government %)

L. E. Nichols Vice President
Radio Central Bldg Spokane, Wash

W. T. Anderson Sec Treas
1021 - West 21st. Spokane Wash

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: Silver Dollar Mining Company, P.O. Box 122
W. 909 Sprague Avenue, Spokane 10, Washington
(an Idaho Corporation)
Pres. Elmer E. Johnston 714 W 14th Spokane Washington

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Joker Nos. 1 thru 8, North Star Nos. 1 thru 16, Poor Boy Nos. 1 thru 5, Black Jack Nos. 1 thru 28 and Black Jack Nos. 24B thru 26B unpatented lode claims situated in Sections 4, 5, 6, 7, 8 and 17, T.37 S., R.17E., San Juan County, Utah

(*b*) State any mine name by which the property is known. Fry Mesa

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

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

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

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

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

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

(*c*) The work will start within 60 days and be completed within 8 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs. None

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated February 22, 1957

SILVER DOLLAR MINING COMPANY
(Applicant)

By Elmer E. Johnston

Elmer E. Johnston, 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

3. Applicant's property rights.

(a) The property of Silver Dollar Mining Company consists of 60 unpatented mining claims namely Joker Nos. 1, 2, 3, 4, 5, 6, 7 and 8, North Star Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16, Poor Boy Nos. 1, 2, 3, 4 and 5, Black Jack Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 24B, 25B, and 26B situated in unsurveyed sections 4, 5, 6, 7, 8 and 17, T.37S., R.17E., San Juan County, Utah.

(b) The name of the property is "Fry Mesa".

(c) Silver Dollar Mining Company is owner of the claims.

(d) There are no liens nor encumbrances on the property.

(e) The following is a list of the Fry Mesa claims of Silver Dollar Mining Company as recorded with the County Recorder, San Juan County, Utah:

NAME OF CLAIM	AMENDMENT(S)	BOOK	PAGE	DATE RECORDED
North Star No. 1		289	414	4-1-55
	North Star No. 1	108	240	5-26-56
North Star No. 2		289	414	4-1-55
	North Star No. 2	108	241	5-26-56
North Star No. 3		289	415	4-1-55
	North Star No. 3	108	242	5-26-56
North Star No. 4		289	415	4-1-55
North Star No. 5		289	416	4-1-55
North Star No. 6		289	416	4-1-55
North Star No. 7		108	252	5-26-56
	North Star No. 7	148	521	12-18-56
North Star No. 8		108	252	5-26-56
	North Star No. 8	138	152	8-29-56
North Star No. 9		108	253	5-26-56
	North Star No. 9	138	153	8-29-56
North Star No. 10		140	149	9-17-56
North Star No. 11		140	150	9-17-56
North Star No. 12		140	150	9-17-56
North Star No. 13		140	151	9-17-56
North Star No. 14		140	151	9-17-56
North Star No. 15		140	152	9-17-56
North Star No. 16		140	152	9-17-56
Black Jack No. 1		231	200	11-15-54
	Black Jack No. 1	108	243	5-26-56
	Black Jack No. 1	138	151	8-29-56
Black Jack No. 2		231	200	11-15-54
	Black Jack No. 2	108	244	5-26-56
	Black Jack No. 2	138	151	8-29-56
Black Jack No. 3		231	201	11-15-54
	Black Jack No. 3	108	245	5-26-56
	Black Jack No. 3	148	309	12-11-56

NAME OF CLAIM	AMENDMENTS(S)	BOOK	PAGE	DATE RECORDED
Black Jack No. 4		231	201	11-15-54
	Black Jack No. 4	108	246	5-26-56
	Black Jack No. 4	148	310	12-11-56
Black Jack No. 5		231	203	11-15-54
	Black Jack No. 5	108	247	5-26-56
	Black Jack No. 5	148	311	12-11-56
Black Jack No. 6		231	203	11-15-54
	Black Jack No. 6	108	248	5-26-56
	Black Jack No. 6	148	312	12-11-56
Black Jack No. 7		231	202	11-15-54
	Black Jack No. 7	108	249	5-26-56
	Black Jack No. 7	148	313	12-11-56
Black Jack No. 8		231	202	11-15-54
	Black Jack No. 8	108	250	5-26-56
	Black Jack No. 8	148	314	12-11-56
Black Jack No. 9		108	253	5-26-56
	Black Jack No. 9	148	315	12-11-56
Black Jack No. 10		108	254	5-26-56
	Black Jack No. 10	148	316	12-11-56
Black Jack No. 11		108	254	5-26-56
	Black Jack No. 11	148	317	12-11-56
Black Jack No. 12		108	255	5-26-56
	Black Jack No. 12	138	152	8-29-56
Black Jack No. 13		108	255	5-26-56
	Black Jack No. 13	148	318	12-11-56
Black Jack No. 14		108	256	5-26-56
	Black Jack No. 14	148	319	12-11-56
Black Jack No. 15		108	256	5-26-56
	Black Jack No. 15	148	320	12-11-56
Black Jack No. 6		108	257	5-26-56
	Black Jack No. 16	148	321	12-11-56
Black Jack No. 17		108	257	5-26-56
	Black Jack No. 17	148	322	12-11-56
Black Jack No. 18		108	258	5-26-56
	Black Jack No. 18	148	323	12-11-56
Black Jack No. 19		108	258	5-26-56
	Black Jack No. 19	148	324	12-11-56
Black Jack No. 20		108	259	5-26-56
	Black Jack No. 20	148	325	12-11-56
Black Jack No. 21		108	259	5-26-56
	Black Jack No. 21	148	326	12-11-56
Black Jack No. 22		108	260	5-26-56
	Black Jack No. 22	148	327	12-11-56
Black Jack No. 23		108	260	5-26-56
	Black Jack No. 23	148	328	12-11-56
Black Jack No. 24		130	391	7-21-56
*Black Jack No. 24		146	275	11-19-56
	Black Jack No. 24B	148	467	12-15-56
Black Jack No. 25		130	392	7-21-56
*Black Jack No. 25		146	276	11-19-56
	Black Jack No. 25B	148	468	12-15-56

NAME OF CLAIM	AMENDMENT(S)	BOOK	PAGE	DATE RECORDED
Black Jack No. 26		130	392	7-21-56
*Black Jack No. 26		146	277	11-19-56
	Black Jack No. 26B	148	469	12-15-56
Black Jack No. 27		130	393	7-21-56
Black Jack No. 28		130	393	7-21-56
Joker No. 1		289	417	4-1-55
	Joker No. 1	108	235	5-26-56
Joker No. 2		289	417	4-1-55
	Joker No. 2	108	236	5-26-56
Joker No. 3		289	418	4-1-55
	Joker No. 3	108	237	5-26-56
Joker No. 4		289	418	4-1-55
	Joker No. 4	108	238	5-26-56
Joker No. 5		289	419	4-1-55
	Joker No. 5	108	239	5-26-56
Joker No. 6		289	419	4-1-55
Joker No. 7		108	251	5-26-56
Joker No. 8		108	251	5-26-56
Poor Boy No. 1		231	205	11-15-54
	Poor Boy No. 1	108	230	5-26-56
	Poor Boy No. 1	148	519	12-18-56
Poor Boy No. 2		231	206	11-15-54
	Poor Boy No. 2	108	231	5-26-56
	Poor Boy No. 2	136	373	8-20-56
Poor Boy No. 3		231	204	11-15-54
	Poor Boy No. 3	108	232	5-26-56
	Poor Boy No. 3	148	520	12-18-56
Poor Boy No. 4		231	204	11-15-54
	Poor Boy No. 4	108	233	5-26-56
Poor Boy No. 5		231	205	11-15-54
	Poor Boy No. 5	108	234	5-26-56

NOTE:
* Number reused in error on new claim location; subsequently, amended as to name with suffix "B".

4. Physical description.

(a) No mining has been done upon the property, and no mine openings exist.

Exploration has been done to the extent of about 42,000 feet of access road, 5,000 feet of rim stripping, 11,358 feet of non-core rotary drilling in 123 holes, 37 feet of core drilling as part of the footage in three holes, and 407 feet of wagon drilling in 23 holes from April thru December, 1956.

All of this was done by and at the expense of Silver Dollar Mining Company.

(b) There has been no production from the property. Although ore holes have been drilled no attempt has been made to calculate a tonnage and grade of ore reserves because of the lack of close contiguous ore holes to provide three dimensional measurements, and the lack of chemical analyses to support radiometric analyses.

(c) The Fry Mesa claims cover a peninsula-like mesa bordered by cliffs between White Canyon on the northeast and Fry Canyon on the west. As the altitude of the surface tapers from about 6800 feet in the southeast towards both canyon rims and towards the point of the peninsula to the northwest, the formation exposed changes from the Mossback down thru the Chinle, Shinarump, Moenkopi to the Cutler. The altitude of the top of the Moenkopi varies from about 6400 feet on the Fry Canyon side to about 6500 feet at the highest point on the White Canyon side. The altitude data in the holes drilled and the survey of some of the places where the Moenkopi-Shinarump contact is exposed indicates the top of the Moenkopi slopes about west-southwest. Moenkopi is exposed around the entire 19,000 feet of rim within the property. At no place where the top of the Moenkopi is exposed has Shinarump been missing, and in none of the drill holes could the cuttings be interpreted with certainty that the Shinarump was absent, hence it is presumed that about 19,000 feet of Shinarump rim occurs upon the property, although covered by hillside sump in some places.

The Shinarump is quite variable in texture from lenses up to several feet thick and several hundred feet long containing rounded pebbles of quartzite, quartz, jasper and marble up to two inches in diameter, thru coarse sandstones, fine sandstones and both beds and inclusions of siltstone. In some places it may be divided into Lower, Middle and Upper Shinarump in which the Lower may vary from coarse conglomerate to fine sandstone and siltstone, the Middle usually from fine sandstone to siltstone, and the Upper from coarse to fine sandstone with some siltstone. The greatest thickness determined todate is about 60 feet.

Where not covered by the occasional Chinle hillside slides the characteristic rim consists of large boulders usually of the Lower Shinarump broken off and slumped down over the Shinarump-Moenkopi contact, permitting only widely scattered observations of the contact without rim stripping. However, evidence along the rim indicates with

varying degrees of certainty the existence of twelve channel outcrops. Six of these are on the Fry Canyon side and six on the White Canyon side, with the probability in most instances that opposite ends of the same channels are represented. Rim exposures and drill hole data indicates that the channels are quite variable in width from as narrow as about 25 feet up to possible several hundred feet wide. From south to north on the Fry Canyon side these are named Channel D, B, A, F, C, and E. On the White Canyon side from northwest to southeast Channel E1, G, H, A1, J, and K. The rim at Channels D and B is within claims owned by Mr. Dale Dillon and White Canyon Mining Company respectively. In the projected general direction of Channels D and B back of the rim claims are claims owned by Silver Dollar Mining Company. All other indicated channel outcrops except possible Channel K are on rim claims owned by Silver Dollar Mining Company.

Scattered copper stain is found in the Lower Shinarump at various places around the rim, and above background count is common near the Shinarump-Moenkopi contact. In some places ore-grade or near ore-grade radiometric readings were obtained.

Because of the fairly steep west-southwestward slope of the top of the Moenkopi, the open nature of the Shinarump on the White Canyon slope, and the porous nature of the formation, meteoric waters have easy access and rapid movement toward and westward along channels at the Shinarump-Moenkopi contact. It is reasonable to expect that this condition has subjected uranium oxides in an oxidizing environment along the way to solution and transportation, and that where these uranium-bearing solutions draining along channels encountered reducing environments such as organic material they were precipitated, and that if a large concentration of the reducing agent was encountered large ore bodies were formed.

The present rather steep western slope of the top of the Moenkopi is with very little doubt the result of being on the west flank of the Elk Ride-Monument Valley uplift. The direction of drainage at time of deposition of the Shinarump is not certain, but from data developed by the A.E.C. and U.S.G.S. in nearby areas it is believed to have been quite gently towards the west. Hence it appears that the present direction and old direction are probably within the same quadrant, and close to the direction of known Channel A which is about west-southwest.

Channel A outcrops on the Fry Canyon rim as a massive cliff of Shinarump sandstone at the bottom of which is a six-inch thickness of copper-stained sandstone showing uranium ore-grade by radiometric analysis. It lies in a trough-like topographic low on the top of the Moenkopi. It has been followed from the Fry Canyon rim by scattered drill holes showing varying amounts of radioactivity, some with ore-grade, bending in its up-stream direction from about N.60°E. to about N.75°E. for the 4,100 feet of length to the Channel A1 outcrop on the White Canyon rim, where again massive sandstone occupies a topographic low on the top of the Moenkopi. This channel has been partly explored, hence for a distance of 420 feet a series of ore-grade holes Nos. 111, 108, 109, 104, 100, 99, 78, and 94, or 100, 97, 79 and 94 can be connected by curving lines that suggest the course of a narrow winding channel that widens out into a small basin. Ore-holes 10, 11, 26 and 61 lie

between about 1,700 feet to 1,900 feet, and ore-hole 119 is about 2,900 feet from the Fry Canyon rim. In all of these the ore horizon is less than three feet thick. In hole 92 about 800 feet from the Fry Canyon rim 12 feet of .07% grade was found. The outcrops on the rim and the drill holes indicate that this channel is less than 50 feet wide except at basins and that the southeast bank is steeper and straighter than the northwest bank.

Channel B outcrops on the Fry Canyon rim in the Bell No. 1 claim of the White Canyon Mining Company where prior to 1956 the A.E.C. did some exploration drilling and where from an adit about 150 feet long copper-bearing uranium ore was shipped. Neither the amount nor the grade is known to the writer. In 1956 the White Canyon Mining Company drilled approximately 50 holes, many of which are in an east-northeasterly direction from the adit, after which without specifying the location this company issued a statement of reserves in which it listed this property as containing several thousand tons of ore. From these data and the probable west-southwest regional slope at the time of deposition of the Shinarump, together with the altitudes of the top of the Moenkopi in drill holes this channel is believed to have a general east-northeast upstream direction about 2,800 feet across the Bell Nos. 1, 2, 3 and 4 claims of the White Canyon Mining Company onto the North Star group of the Silver Dollar Mining Company, where across a distance of about 3,800 feet Channel J is indicated by copper stain and abnormally high radiometric counts at the White Canyon rim.

On the Fry Canyon rim of Black Jack Nos. 14, 16, and 17 claims Channel C is indefinite both as to its precise location and its direction. It may be a west-northwesterly bending channel or it may be a wide channel several hundred feet across similar in direction to the regional slope. The Shinarump-Moenkopi contact is almost entirely covered so rim examination has not revealed a topographic low on top of the Moenkopi. At several places the Shinarump is copper stained. In part of this area the Chinle has been eroded away for more than a thousand feet back from the rim exposing a surface of Shinarump. Surface ridges and slopes of sandstone cross the area in a west-northwesterly direction suggesting channel allignment below. Peninsulas of Shinarump have developed from the more massive sandstone in the process of erosion. These occur in the same general west-northwesterly allignment and are presumed to indicate a possible channel direction. This direction however is about 60° to the indicated trends of Channels A and B and the presumed regional slope. A contradictory interpretation of a west-northwesterly trend of this channel presumed from the trend of ridges of eroded Shinarump sandstone is based upon a similar ridge with a trend in the same direction on Black Jack Nos. 1 and 9 claims near drill hole No. 82 where the elevation at the top of the Moenkopi in the nearby holes indicates that Channel A trends under the ridge at an angle of about 60°. Also in the area of the rim stripping on Black Jack No. 13 claim which is along the approximate line of sandstone ridges at holes 39 and 82 minor channel structures trending southwesterly are exposed showing channels at the Shinarump-Moenkopi contact as well as perched in the Shinarump. These suggest that these erosional ridges might be the result of littoral currents at the mouth of a stream on a sinking shoreline.

A possible interpretation of a west-northwesterly course for Channel C is that a channel from Black Jack No. 14 to Black Jack No. 9 claim has been eroded away, and this channel in the upstream direction bends more easterly across Black Jack No. 9 claim between drill holes 5 and 9 towards the White Canyon rim; thus making Channel A tributary to Channel C. Another possible interpretation is that Channel C in its upstream direction bends northeastward on Black Jack No. 13 claim and crosses over to the White Canyon rim.

The conditions that indicate an east-northeast upstream trend for Channel C is that a massive promontory of sandstone facing southwesterly on the rim protrudes outward towards Fry Canyon, and about 4,000 feet N.60°E. a similar promontory labled Channel H protrudes outwardly towards White Canyon. The elevations of the top of the Moenkopi in the line of drill holes 44, 43, 42, 41, 40 and 39 show a fairly regular decrease to hole 40, and steeper from hole 40 to 39 indicating an approach to a topographic low. There is little to indicate the southeast limit of such a west-northwest channel, except the width of the promontories on both rims, which may have been narrowed by unusually strong stream erosion, until drill hole 49 is reached about 1,000 feet southeasterly from a line running N.60°E. from drill hole 39. The altitudes of the top of the Moenkopi in the line of holes 45, 46, 47, 48 and 49 decrease with a steepening between holes 48 and 49, which indicate approach to a topogrphic low even though the indicated direction of the contours along the top of the Moenkopi is about 45° easterly to the line of the holes. In the area of the rim-stripping on Black Jack No. 13 claims the Shinarump is thick and massive but eroded back by stream action and rests upon an irregular Moenkopi surface showing occassional copper stains in both contact and perched channels over a distance of about 800 feet. And although one of these is labled Channel F, it could be part of a broad channel that includes Channel C. Again on the White Canyon rim at Channel G copper stain and abnormally high radiometric count is found in a perched channel that has eroded through the lower Shinarump to the Moenkopi several hundred feet west of the Channel H promontory suggesting a wide channel.

The channel H rim area has very little exposure of the Shinarump-Moenkopi contact. The cliff promontory exposes perched channels or lenses of coarse conglomerate, and coarse sandstone with scattered red stained iron oxide. Back of the rim wagon drill hole No. 4 encountered trace mineralization by probe analyses.

On the Fry Canyon rim starting near the south line of the Joker No. 8 claim and extending for several hundred feet southerly a thickening of the Shinarump sandstone occurs characteristic of a channel condition which is here labled "Channel D". A good radiometric count was found in a perched channel, but the contact with the Moenkopi is mostly covered and unavailable for observations. Evidence on perched channels indicates a westerly trending channel, but not sufficiently precise to indicate a course closer than between 30° north and 30° south of east in the upstream direction. Altitudes of the top of the Moenkopi in drill holes 6, 1, 2 and 63 indicate a westerly flowing drainage surface between holes 6 and 63, probably south of hole 2. The claim

on which this probable channel outcrops is the Yellow John No. 24 owned by Mr. Dale Dillon. The description of this claim indicates that it extends northeasterly across most of the surface below the Mossback rim. Upon this claim some drilling was done by the owner but no attempt was made to recover the cuttings for measured intervals, and data are not available as to the depths to the Moenkopi. Hence these holes do not provide a guide of the relative altitudes of the top of the Moenkopi to determine the position or direction of the channel. But they are located east-northeasterly from the promontory, and suggest the drilling found some indication of directionalism. Further evidence of an east-northeast trend is a strong promontory of rock labled Channel K on the White Canyon rim associated with radiometric counts of ore-grade about 8,400 feet in a N.58°E. direction from Channel D promontory.

On Black Jack No. 20 claim at the southwesterly face of the rim a promontory of sandstone contains perched channels in which copper stain is found. This is labled Channel E. The Shinarump-Moenkopi contact is mostly covered, but the perched channels appear to have a west-southwesterly direction. Across the mesa on the White Canyon rim about 1,200 feet in a N.60°E. direction a small promontory exists which is labled Channel El. In this place the contact is hidden, but bleaching and iron stain occur in the exposed rocks near the contact. On the surface between these promontories erosion has exposed a flank of a Shinarump sandstone ridge along this general allignment. The Shinarump sandstone cover probably does not exceed 30 feet thick and in many places is strongly colored with iron oxide.

Channel J rim area is covered by a hillside slump made up probably of middle and upper Shinarump. Copper stained sandstone of upper Shinarump is found along the rim a short distance to the northwest. An irregular canyon has eroded back into the rim on the southeast side exposing an area of lower Shinarump with above normal radioactivity.

(d) Access to the property is by the White Canyon State highway, 45 miles west from Blanding, Utah to To-ko-chi Canyon, about one mile west of the Owachomo natural bridge road, then about 1.5 miles up this canyon onto Mossback Mesa and then northward about three miles onto the property. Fry Canyon trading post is about 11 miles northwest along the White Canyon road from the To-ko-chi Canyon turnoff. The White Canyon buying station is about 25 miles north-west of the turnoff. And a new road to the mill being built at Mexican Hat is now under construction and turns off the White Canyon road 11 miles east of To-ko-chi canyon.

(e) Availability of manpower is about the same as for other areas of the Plateau. It fluctuates and is less with unusually high demand during boom and more when such peaks have passed.

Material, supplies and equipment are available from Blanding and places beyond.

Water is in short supply and for domestic supply must be hauled from springs about 15 miles away.

Power must be generated locally by each operator.

5. The exploration project.

(a) Exploration is for uranium.

(b) The proposed work.

For each channel exploration is to consist of: First, back of the rim in the direction of the probable trend from the indicated channel outcrops drill a line of holes to the Moenkopi at approximately a right angle to the present regional slope of the top of the Moenkopi, and the probable trend of the channel, to intersect or find the channel on the top of the Moenkopi; and second, follow the channel with advantageously placed holes in search of ore concentrations within or associated with channels.

The top of the Moenkopi is somewhat variable in texture and color, hence to be certain that this formation has been reached all holes are to be drilled to 5 feet into the Moenkopi unless positive identification has been made in a lesser distance. If positive identification has not been made in 5 feet the hole is to be continued until identification is reasonably certain.

For the purpose of clarity each channel is treated as a separate entity in the plan of exploration.

Channel A. This channel is partly drilled out with indications that the width, except for basins, is less than 50 feet, and the southeast bank is steeper and straighter than the northwest bank; hence holes grouped to form cross-sections of the channel must be closely spaced to avoid bracketing the channel, and the edge and direction of the channel can be determined more definitely with less drilling by holes that intersect the top of the Moenkopi on the southeast bank than on the northwest.

This program is laid out to take advantage of holes already drilled, with emphasis upon working from the projected channel to the southeast bank first, and keeping the holes close enough in the cross-sections to minimize the chance of bracketing the channel. The most economical spacing of holes is different in deep drilling and expensive drill site preparations than in shallow drilling and easy preparations, hence the problem along the full length of this channel is not the same and the solution is divided here into three objectives.

Objective I. The first objective is to determine the width of the ore along the known ore holes for the first 400 feet from the Fry Canyon rim, and the width and line of extension for the remainder of the first 1000 feet from the rim. The surface over this area is relatively level Shinarump sandstone on which drill sites can be prepared easily, and the depth to the Moenkopi averages about 45 feet except in the northeasterly 300 feet where the surface becomes more rugged Chinle and the drilling depth increases to about 90 feet. The following holes are to be drilled to 5 feet into the Moenkopi:

A1. At 50 feet S.75°W. from hole 111, probable depth 50 feet.
A2. At 25 feet S.30°E. from hole A1, probable depth 50 feet.

A3. At 25 feet N.30°W. from hole A1, probable depth 45 feet.
A4. At 25 feet S.30°E. from hole 111, probable depth 50 feet.
A5. At 25 feet N.30°W. from hole 111, probable depth 50 feet.
A6. At 25 feet S.30°E. from hole 108, probable depth 55 feet.
A7. At 20 feet N.45°W. from hole 104, probable depth 55 feet.
A8. At 25 feet N.45°W. from hole 100, probable depth 45 feet.
A9. At 25 feet N.45°W. from hole 78, probable depth 40 feet.
A10. At 25 feet N.45°W. from hole 93, probable depth 45 feet.
A11. At 25 feet N.45°W. from hole 96, probable depth 50 feet.
A12. If either holes A9 or A10 hit .10% U308 equivalent or better by radiometric analysis locate this hole 25 feet N.45°W. from hole A10, probable depth 45 feet. If neither holes A9 nor hole A10 hit as above, do not drill this hole.

A13. At 20 feet S.45°E. from hole 85, probable depth 55 feet.

A14. If either holes A10 or A12 hit .10% or better equivalent and hole A13 does not hit .10% or better locate this hole 25 feet N.45°W. from hole 85, probable depth 55 feet. If neither hole A10 nor A12 hit and hole A13 does hit do not drill this hole.

A15. If hole A11 hits .10% or better equivalent and hole A13 does not, locate this hole 25 feet S.50°E. from hole 82, probable depth 60 feet.

A16. From the position of the channel as determined from the section containing holes A10 and A11 and the section containing holes 81 thru 83 together with the section containing holes 88, 90, 86, and 51 determine the probable channel position in the hole 88 to 51 section and locate hole accordingly. If this location should be nearer than 25 feet from the nearest hole in the section move to a point 25 feet from the nearest hole, probable depth 45 feet.

A17. At 35 feet N.40°W. from hole 87, probable depth 60 feet.

A18. If hole A17 hits .10% or better equivalent drill this hole 25 feet N.40°W. from hole A17, probable depth 60 feet. If hole A17 does not hit do not drill hole A18.

A19. At 25 feet N.25°W. from hole 92 in which 12 feet of .07% U308 radiometric equivalent was found, probable depth 60 feet.

A20. At 25 feet S.25°E. from hole 92 probable depth 80 feet.

A21. With the probable position of the channel crossing determined in section thru holes 89 and 87, and section thru holes A19, 92 and A20 locate a hole on the projection of the channel 100 feet northeasterly about N.65°E. from section thru holes A19, 92 and A20, probable depth 80 feet.

A22. At 50 feet S.25°E. from hole A21, probable depth 90 feet.

A23. If the altitude of the top of the Moenkopi in hole A22 is lower than in hole A21 locate a hole at 50 feet S.25°E. from hole A22. If it is higher locate at 50 feet N.25°W. from hole A21, probable depth 80 feet.

This completes the first objective with about 1,305 feet of hole.

Objective II. The second objective is to start at hole 59 and follow the channel northeastward up to the top of the ridge through a zone of scattered drill holes, some of which hit ore. Because the drilling depth is from about 90 feet up to 160 feet and the terrain is quite rugged, making drill site preparation difficult, these holes are spaced at longer intervals along the general course of the channel than in the first objective, and are adjusted as to distance to make use of the present holes to the greatest extent possible. The following holes are to be drilled to 5 feet into the Moenkopi:

A24. At 50 feet S.25°E. from hole 59, probable depth 90 feet.

A25. If the elevation of the top of the Moenkopi on hole A24 is lower than in hole 59 locate hole A25 at 50 feet S.25°E. from hole A24. If it is higher locate it at 50 feet N.25°W. from hole 59, probable depth 90 feet.

A26. Project the course of the channel determined in section thru holes A23, A21, A22 and in section thru holes A25, 59 and A24 northeastward. If it passes southeast of hole 58 drill hole A26 at 50 feet S.25°E. from hole 58. If it projects past on the northwest side locate it at 50 feet N.25°W. from hole 58, probable depth 95 feet.

A27. If in hole A26 the top of the Moenkopi is lower than in hole 58 move to 50 feet farther away from hole 58 in either a S.25°E. or N.25°W. direction, probable depth 95 feet.

A28. Project the channel northeastward from section thru holes A24, 59 and A25 and section thru holes A27, 58 and A26 to its intersection with a section through holes 57 and 71. Locate hole A28 at this latter intersection. If the projection deviates radically from the probable line of the channel farther northeast in section thru holes 65 and 61 locate the hole at the intersection of the section with a line to this farther northeast point, probable depth 125 feet.

A29. From the section thru holes 57, A28, and 71 determine the indicated low for the position of the channel and drill hole, probable depth 125 feet. If the indicated low is closer than 25 feet from an existing hole move along section to 25 feet away.

A30. At 25 feet N.40°W. from ore hole 61, probable depth 125 feet.

A31. If hole A30 hits better than .10% equivalent locate hole at 25 feet N.40°W. from hole A30, probable depth 125 feet. If this grade is not hit do not drill hole A31.

A32. At 25 feet S.50°E. from ore hole 61, probable depth 130 feet.

A33. At 25 feet S.30°E. from ore hole 11, probable depth 145 feet.

A34. If hole A33 hits plus .10% equivalent locate hole half-way between holes A33 and 21 about 22 feet S.30°E. from hole A33, probable depth 145 feet. If hole A33 does not hit the above grade do not drill hole A34.

A35. At a point 30 feet N.20°W. from hole 22, probable depth 145 feet. A small variation may be permitted in this location if necessary to avoid large boulders.

This completes the second objective with about 1,435 feet of hole.

Objective III. The third objective is to start at ore hole 119 and develop the line and width of the channel for the 1,250 feet east-northeastward to the White Canyon rim, and the 1,050 feet west-southwest to hole A33. West of hole 119 the drilling depth varies from 75 to 140 feet and east of hole 119 from 75 to 30 feet. In this objective advantage is to be taken of existing roads as drill sites where possible, and holes are to be drilled to 5 feet into the Moenkopi at the following sites:

A36. On road N.70°E. about 165 feet from hole 119, probable depth 70 feet.

A37. On road 50 feet southeasterly from hole A36, probable depth 70 feet.

A38. If the altitude of the top of the Moenkopi in hole A37 is lower than in hole A36 locate hole A38 on road 50 feet southeasterly. If it is higher locate hole A38 on road 50 feet northwesterly, probable depth 70 feet.

A39. On the road at about 140 feet and about N.75°E. from hole A36, probable depth 70 feet. The preicse direction from hole A36 is to be determined by the line of topographic lows at the top of the Moenkopi in sections thru holes 120, 119, 35 and A38, A36, A37.

A40. Off the road at 50 feet S.30°E. from hole A39, probable depth 70 feet.

A41. Off the road at 50 feet N.30°W. from hole A39, probable depth 70 feet.

A42. At about N.75°E., 200 feet from hole A39, probable depth 100 feet. The precise direction from hole A39 is to be determined by the course of the channel from sections thru hole A36 and hole A39.

A43. At 50 feet S.30°E. from hole A42, probable depth 100 feet.

A44. At 50 feet N.30°W. from hole A42, probable depth 100 feet.

A45. On the road at about 200 feet about N.75°E. from hole A42, probable depth 60 feet. The precise direction is to be determined from the position of the channel in sections thru holes A40, A39, A41 and A43, A42, A44 and the position of the channel at the rim.

A46. On the road at 50 feet southeasterly from hole A45, probable depth 60 feet.

A47. On the road at 50 feet northwesterly from hole A45, probable depth 60 feet.

A48. On a direct line between the intersection of the channel with section thru holes A46, A45, A47 and the outcrop of the channel on the rim which is about N.75°E. and at 200 feet from hole A45, probable depth 40 feet.

A49. At 40 feet S.30°E. from hole A48, probable depth 50 feet.

A50. At 25 feet N.30°W. from hole A48, probable depth 30 feet.

A51. On a direct line between the intersection of the section thru holes A49, A48, A50 with the channel and the outcrop of the channel on the rim and at 150 feet from hole A48, probable depth 30 feet.

A52. At 30 feet S.30°E. from hole A51, probable depth 30 feet.

A53. On road at about 80 feet about N.75°E. from hole 119 on a line between hole 119 and the probable channel position in section thru holes A37, A36, A38, probable depth 70 feet.

A54. On line between holes 34 and 35 and at 50 feet from hole 34, probable depth 60 feet.

A55. At 200 feet S.68°W. from hole 119, probable depth 60 feet.

A56. At 50 feet S.30°E. from hole A55, probable depth 60 feet.

A57. If the top of the Moenkopi in hole A56 is lower than in hole A55 locate hole A57 at 50 feet S.30°E. from hole A56. If it is higher locate at 50 feet N.30°W. from hole A55, probable depth 60 feet.

A58. At about S.65°W. between 100 and 200 feet from hole A55, probable depth 100 feet. The distance is to be determined by the convenience of avoiding a difficult drill site on a boulder strewn hillside, and the direction is to be determined from the probable line of the channel thru sections including holes 119, A54, A55, and A33.

A59. At 50 feet S.30°E. from hole A58, probable depth 110 feet.

A60. At 50 feet N.30°W. from hole A58, probable depth 110 feet.

A61. At 50 feet S.30°E. from hole 76, probable depth 135 feet.

A62. At 40 feet S.30°E. from hole 75, probable depth 140 feet.

A63. On line between holes 72 and 73 at 60 feet S.25°E. from hole 72, probable depth 145 feet.

A64. At 45 feet S.20°E. from hole 37, probable depth 140 feet.

This completes the third objective with about 2,270 feet of hole.

Channel A-1. Exploration of this channel outcropping on the White Canyon rim is provided for under the program for exploring channel A from its Fry Canyon rim outcrop across to the White Canyon rim.

Channel B. The exploration problem in this channel on Silver Dollar Mining Company ground consists first of locating the channel on the Fry Canyon side of the property; second, determining of direction of the channel, and third, following the channel in search of ore concentrations. This is to be carried out in two phases, the first to consist of locating and determining the direction of the channel and the second following the channel. If the first phase is not successful in finding and determining the direction of the channel, the second phase is not to be carried out. If, however, the first phase is successful the second is to be carried out.

Phase I. The following holes are to be drilled to 5 feet into the Moenkopi:

B1. Along road 400 feet southerly from hole 112, probable depth 160 feet.

B2. Along road 200 feet southerly from hole 112, probable depth 150 feet.

B3. Along road 200 feet northerly from hole 112, probable depth 145 feet.

B4. Along road 400 feet northerly fromhole 112, probable depth 160 feet.

B5. Along road 600 feet northerly from hole 112, probable depth 160 feet.

The data from the logs in holes 5 and 63 may be deceptive because of poor logging that resulted from poor care of the cuttings while drilling hole 5 and from a possible failure to reach the Moenkopi in hole 63. Hence, if after drilling holes B1 thru B5 a topographic low at the top of the Moenkopi indicating a channel has not been disclosed four holes are to be drilled as follow:

B6. Along road 200 feet northeasterly from hole 63, probable depth 160 feet.

B7, B8, and B9. In the draw southwesterly from hole 63 at intervals of 200 feet put down these three holes, probable average depth 150 feet.

Do not drill holes B6 thru B9 unless holes B1 thru B5 failed to indicate a channel.

B10. Along a section through holes between 9 and 114 determine the probable topographic low on the top of the Moenkopi and drill at this position, probable depth 150 feet.

B11. Determine more precisely the probable topographic low in this section from reevaluation with hole B10 and establish a site at 200 feet S60°W. from this low in the section, probable depth 150 feet.

B12. At 100 feet S.30°E. from hole B11, probable depth 150 feet.

B13. If the top of the Moenkopi is lower in hole B11 than in Hole B10 move to 100 feet S.30°E. from hole B12. If it is higher move to 100 feet N.30°W. from hole B11, probable depth 150 feet.

Adjust the distances to B11, B12, and B13 if the sites occur among difficult boulders or cliffs.

B14. From the position of the probable topographic lows in section thru holes B11, B12, B13 and in section through holes from 9 to 114 determine the northeasterly trend of the channel, and move to a site at 200 feet in this direction from the topographic low near B10, probable depth 180 feet.

B15. At 100 feet S.30°E. from hole B14, probable depth 180 feet.

B16. If the top of the Moenkopi is lower in hole B15 than in hole B14 move to 100 feet S.30°E. from hole B15. If it is higher move to 100 feet N.30°W. from hole B14, probable depth 170 feet.

This terminates the first phase of exploration of this channel with about 2,515 feet of drilling.

Phase II. B17 thru B37. If the first phase has established the presence of a well-defined channel it is to be developed eastward by a series of holes in groups of threes 100 feet apart at right angle to the line of the channel and groups spaced at intervals of 400 feet. The positions of the three-hole groups are to be determined in the same manner as in the first phase, and requires 15 holes from above the Mossback that should average about 240 feet each, and 3 holes that should average about 200 feet.

This terminates the second phase with about 4,200 feet of drilling.

Channel C. The exploration problem in this channel is to locate the channel, determine its width and direction and then explore along its trend for ore concentrations. In the Fry Canyon rim area of Black Jack Nos. 17, 16, 14, and 13 claims the surface consists of relatively level Shinarump sandstone from 100 to more than 1,000 feet back from the rim. Drilling will be shallow, approximately 15 to 30 feet, and preparation of drill sites easy. Following the channel in an east-northeast direction will require drilling from rugged Chinle slopes and to much greater depth. In consideration of these conditions together with the wide variation between the possible west-northwest and the west-southwest direction of channel this is laid out in three phases, the first to locate the position and width of the channel by shallow drilling, the second to develop the west-northwest trend if drilling in the first indicates such a trend exists, and the third to develop the west-southwest trend if indicated by the first.

Phase I. C1 thru C6. Drill a line of six holes at 100 feet intervals in a S.40°W. direction from hole 39, average depth 20 feet.

C7 thru C30. Drill a second line of 24 holes the first six of which, C7 thru C12, are at 100 foot intervals in a S.60°E. direction from hole 39, then next eight holes, C13 thru C20, at 100 foot intervals in a due east direction from hole C12, and the next ten holes, C21 thru C30, at 100 foot intervals in a S.60°E. direction from hole C20, probable average depth 25 feet. This completes the first phase with about 720 feet of drilling.

Phase II. If line one developes a topographic low on the top of the Moenkopi that indicates a channel and does not show or indicate a northeasterly trend across line 2, drill the following holes:

C31. At 100 feet N.60°W. from the indicated low, probable depth 20 feet.

C32. At 100 feet S.40°W. from C31, probable depth 20 feet.

C33. If the difference in altitude of the top of the Moenkopi between holes C31 and C32 is greater than between that in the two holes on either side of and adjacent to the low in the hole C1 to C6 series move to 100 feet S.40°W. from hole C32. If it is less move to 100 feet N.40°E. from hole C31, probable depth 20 feet.

C34. From the topographic lows at the top of the Moenkopi indicated by the sections thru holes C1 to C6 and holes C31, C32, and C33 establish a probable channel course and locate hole C34 along this line southeasterly at 100 feet, probable depth 20 feet.

C35. Move to 50 feet southwesterly from hole C34 at a right angle to the indicated channel line, probable depth 20 feet.

C36. Move to 50 feet northeasterly from hole C34 at a right angle to the indicated channel line thru hole C34, probable depth 20 feet.

C37, C38, C39, C40, C41 and C42. Continue southeasterly along the indicated line of the channel for two more sets of three holes at a right angle to the channel 50 feet apart and at intervals of 100 feet along the channel the same as in holes C33, C34, C35, probable depth 20 feet average.

C43, C44, and C45. Move to 100 feet northwesterly from the intersection of the channel with section C31, C32, and C33 and drill out similar to holes C34, C35, and C36, probable average depth 20 feet.

With about 300 feet drilled in holes C31 thru C45 the second phase is to be terminated.

If line one does not develop a topographic low on the top of the Moenkopi and thus fails to indicate a channel, or if a topographic low is developed in line one which when combined with topographic data in line 2 indicates a channel in a northeasterly direction do not drill series of holes C31 thru C45.

Phase III. If line 2 develops a topographic low on the top of the Moenkopi that indicates a channel and line one develops a low in a southwesterly direction indicating a common channel, or if line 2 develops a low that indicates a channel which would not intersect line one, drill the following holes:

C46. At 200 feet or halfway to the rim, whichever is the lesser in a S60°W. direction from the indicated low, probable depth 25 feet.

C47. Move to 100 feet S.45°E. from hole C46, probable depth 25 feet.

C48. If the top of the Moenkopi is lower in hole C47 than in C46 move to 100 feet S.45°E. from hole C47, if higher move to 50 feet N.45°W. from hole C46, probable depth 25 feet. If the points of intersection of the indicated channel with lines one and two are less than 400 feet apart, move holes C46, C47 and C48 to a more advantageous distance from line 2.

C49. Along a northeasterly course in a direction indicated by section through holes C46, C47 and C48 and thru line 2 to be the probable course of the channel locate hole at 200 feet from line 2, probable depth 40 feet.

C50, and C51. Locate these holes from hole C49 in a similar manner with 100 feet of distance and S30°E. and N.30°W.courses as in holes C47 and C48, probable average depth 40 feet.

C52 thru C72. A series of 7 groups of 3 holes 100 feet apart at right angle to the line of the channel and 400 feet between groups along the line of the channel located in the same manner as holes C49, C50 and C51, probable average depth 100 feet.

This ends the third phase with about 2,295 feet of drilling.

Phase IV. C73 thru C78. If a second channel crossing line 2 is found it is to be developed by a series of holes located similar to holes C46 thru C51, estimated average depth 35 feet.

This would end the fourth phase with about 210 feet of drilling.

Channel D. The Poor Boy group of claims joins the Yellow John No. 24 claim on the east mostly above the Mossback rim. To locate this channel on claims owned by Silver Dollar Mining Company requires deep drilling mostly about 250 feet from the Mossback Mesa and some 220 feet deep with difficult drill site preparations in the slump area below the Mossback rim. And to explore the channel for ore concentrations requires mostly deep drilling from the Mossback Mesa. Exploration of this channel is therefore divided into two phases, the first finding and determining the trend of the channel and the second, following it to find ore bodies.

Phase I. To locate this channel a line of holes is to be started east of the Yellow John No. 24 claim close to a line running N.60°E. from the Yellow John No. 24 location Monument, and are to be drilled to 5 feet into the Moenkopi along a southerly line at intervals of about 400 feet to find a topographic low on the top of the Moenkopi. Next, holes are to be spaced closer along this line to locate the channel, followed by offset holes to determine the direction of the channel.

These holes are to be drilled as follows:

D1. East of Bell No. 5 claim at 540 feet S.5°E. from hole 4, probable depth 220 feet. This site is below the Mossback rim and may be among giant sandstone boulders, hence to avoid excessive cost of preparation of site it may be moved to any point within 100 feet northerly or southerly that is east of a line north and south through this point.

D2. At 400 feet due south of hole D1, probable depth 240 feet.

D3. At 400 feet due south of hole D2, probable depth 240 feet.

D4. At 400 feet due south of hole D3, probable depth 240 feet.

D5. At 400 feet due south of hole D4, probable depth 240 feet.

D6. If a topographic low on the top of the Moenkopi has not been revealed by holes D1 thru D5, drill the next one at 400 feet due south of hole D5. If a topographic low has been shown drill halfway between the two holes between which the low is indicated; probable depth 240 feet.

D7. If the altitude of the top of the Moenkopi in hole D6 is lower than in both adjoining holes drill another hole between D6 and the adjoining low hole. If it is higher than one and lower than the other drill at 100 feet beyond the low hole, probable depth, 240 feet.

D8. Establish a course from a point on the Fry Canyon rim 200 feet southerly from Yellow John No. 24 location monument thru the probable channel in the indicated low of the section thru holes D6 and D7 and adjacent holes and establish a site 400 feet easterly on this course, probable depth 250 feet.

D9. Move to 100 feet southerly at a right angle to the line from the topographic low in the section to hole D8, probable depth 250 feet.

D10. If the top of the Moenkopi is lower in hole D9 than in hole D8, move to 100 feet farther in the same direction as from hole D8 to hole D9. If it is higher move to 100 feet in the opposite direction from hole D8, probable depth 250 feet.

D11. If hole D10 has been drilled southerly from hole D9 and the top of the Moenkopi in hole D10 is lower than in hole D9 move to 100 feet farther southerly from hole D10 on the same course as from hole D9 to hole D10. Or if favorable radiometric results were obtained in the topographic low in the section thru holes D6 and D7 and adjacent hole, and has not been obtained in holes D8, D9 or D10, and the elevation of the Moenkopi of the central one of holes D8, D9 and D10 is lower than

the outside ones, drill halfway between the two lowest, probable depth of hole 250 feet. Or if hole D10 has been drilled northerly from hole D8 and the top of the Moenkopi in hole D10 is lower than in hole D8 locate at 100 feet northerly from hole D10 in the same direction as from hole D8 to hole D10.

This terminates the first phase of this channel with about 2,660 feet of drilling.

Phase II. If the channel has been found and radiometric results are favorable proceed with the second phase. If the channel has been found and radiometric results have not been favorable proceed with the second phase only if mutual agreement between the DMEA Field Team and the Company representative is reached in favor of such, which is to consist of drilling the following holes to 5 feet into the Moenkopi:

D12. Determine the probable course of the channel from the direction between the indicated topographic low in section through holes D1 and D7 and section thru holes D8 and D10 and locate hole at 400 feet easterly in that direction, probable depth 260 feet.

D13. At 100 feet southerly from hole D12 on a course at a right angle to line between the topographic low in section thru holes D8 and D10 to hole D12, probable depth, 260 feet.

D14. Determine the position of this hole from hole D13 or hole D12 in the same manner as hole D10 from hole D9 or hole D8, probable depth 260 feet.

D15, D16, D17. Determine the position of these holes at 400 feet easterly from hole D12 in the same manner as holes D12, D13, and D14 from hole D8, probable average depth 270 feet. This terminates the second phase of this channel with about 1,590 feet of drilling.

Channel E. The surface over the area where this channel is indicated to extend is relatively flat Shinarump sandstone except for a hill of Chinle near the southwest rim. Drilling depth is quite shallow, mostly less than 30 feet, and drill site preparations easy, hence exploration to find and follow this channel is laid out all in one phase. A second phase is proposed to provide more detail if the first phase is successful.

Phase I. The following holes are to be drilled to 5 feet into the Moenkopi:

E1. At 150 feet N.50°E. from the 489 foot witness corner of the west corner of Black Jack No. 21, probable depth 25 feet. If starting hole E1 at 150 feet from the witness corner runs line of holes E2 thru E7 into difficult drill sites caused by stuff from the Chinle hill, E1 may be started at 200 feet from the witness corner.

E2, E3, E4, E5, E6 and E7. At intervals of 100 feet along a line S20°E. from hole E1, probable average depth 30 feet.

E8. If in a section along holes E1 thru E7 a topographic low on the top of the Moenkopi indicating a channel is disclosed locate hole on the section thru the line of holes at the indicated low, probable depth 30 feet.

E9. After drilling hole E8 reevaluate the probable topographic low or channel center, and from this point move to 200 feet N60°E., probable depth 30 feet.

E10. Move to 100 feet S.30°E. of hole E9, probable depth 30 feet.

E11. If the top of the Moenkopi in hole E10 is lower than in hole E9 move to 100 feet S.30°E. of hole E10. If it is higher move to 100 feet N.30°W. of hole E9, probable depth 30 feet.

E12. From the position of the probable topographic lows of the top of the Moenkopi in section thru holes E1 to E7 near E8, and section thru holes E9, E10, and E11 establish the probable course of the channel and move in this direction to 200 feet northeasterly from the topographic low in section thru holes E9, E10, and E11, probable depth 30 feet.

E13. Move to 100 feet S.30°E. of hole E12, probable depth 30 feet.

E14. If the altitude of the top of the Moenkopi in hole E13 is lower than in hole E12, move to 100 feet S.30°E. of hole E13, If it is higher move to 100 feet N.30°W. of hole E12, probable depth 30 feet.

E15, E16, and E17. These are to be located from the section thru holes E12, E13, and E14 in the same manner as holes E12, E13 and E14 were located from section thru holes E9, E10 and E11, probable average depth for the three holes 30 feet.

E18. Determine the course of the channel in sections thru holes previously drilled and move in this direction southwesterly to between 300 and 400 feet from hole E8 and choose site that avoids large hillside boulders, probable depth 20 feet.

E19. Move to 50 feet S.30°E. of hole E18 adjusting both direction and distance to avoid large hillside boulders, probable depth 20 feet.

E20. If the surface of the Moenkopi is lower in hole E19 than in hole E18 move to 50 feet S.30°E. of hole E19. If it is higher move to 50 feet N.30°W. from hole E18, adjusting both direction and distance to avoid large hillside boulders, probable depth 20 feet.

This ends the first phase of exploration of the channel with about 565 feet of drilling.

Phase II. If drilling in the first phase has located a channel with favorable radioactivity 300 additional feet of drilling is authorized at the discretion of the company geologist.

Channel E1. Exploration of this indicated channel is provided for under the program for Channel E.

Channel F. Both back of the rim location of this channel and determination of its direction is provided for in the procedure to determine if channel C is several hundred feet wide, and to determine the direction if a narrower channel is encountered within the broad area cross-sectioned in determining the width of Channel C. No special exploration is proposed for Channel F except possibly under the final phase of all channels.

Channel G. This channel may not be the White Canyon rim outcrop of the Fry Canyon rim Channel C. To locate this channel back from the rim in Black Jack No. 5 claim drill the following holes to 5 feet into the Moenkopi:

G1. At 200 feet from the rim in line with the exposures of the channel on both sides of the peninsula-like point on Black Jack 26B claim and the rim on Black Jack No. 5 claim, probable depth 30 feet.

G2. At 50 feet S.50°E. from hole G1, probable depth 30 feet.

G3. At 50 feet S.50°E. from hole G2, probable depth 30 feet.

G4. At 50 feet N.50°W. from hole G1, probable depth 30 feet.

G5. At 50 feet N.50°W. from hole G4, probable depth 30 feet.

This terminates exploration of this channel with about 150 feet of drilling.

Channel H. To check and develop the radiometric kick obtained in wagon drill hole 4 and the shallow drilling back from the rim area farther northwesterly near the White Canyon rim, drill the following holes to 5 feet into the Moenkopi:

H1 thru H8. Eight holes at intervals of 50 feet along a line N.30°W. from wagon drill hole 3, probable average depth 30 feet. Wagon drill hole 3 is about N.10°W. 125 feet from the location monument of Black Jack No. 5 claim.

This terminates exploration of this channel with about 240 feet of drilling.

Channel J. To locate the position of Channel J on the White Canyon rim drill six holes to 5 feet into the Moenkopi approximately 150 feet back from the rim:

J1. At a point 20 feet N.30°W. from the southeast corner of Black Jack No. 23 claim, probable depth 30 feet.

J2. At 100 feet N.30°W. from hole J1, probable depth 40 feet.

J3. At 100 feet N.30°W. from hole J2, probable depth 40 feet.

J4. At 100 feet S.30°E.from hole J1, probable depth 30 feet.

J5. At 100 feet S.30°E. from hole J4, probable depth 40 feet.

J6. At 200 feet about S.60°E. from hole J5, probable depth 40 feet.

This terminates exploration of this channel with about 220 feet of drilling.

Channel K. Although Channel K may be the White Canyon rim location of Channel D it is separated from the proposed exploration on the Fry Canyon rim slope by a group of claims owned by a third party, and is therefore to be explored as a separate entity on the White Canyon slope. This requires about 2,400 feet of access road roughly parallel to, above and 100 or more feet back from the Shinarump rim, starting from the present rim-stripping road on Black Jack No. 258 claim and extending southerly across North Star No. 16, followed by a line of drill holes along this road and a group of offset holes.

Drill holes are to be located as follows and drilled to 5 feet into the Moenkopi:

K1. At a point on the access road 200 feet north of the south end-line of North Star No. 16 claim, probable depth 60 feet.

K2. Northerly along the access road at 200 feet from hole K1, probable depth 60 feet.

K3.thru K8. A series of 6 holes at intervals of 200 feet northerly along the access road, probable average depth 60 feet.

K9. If a channel structure is indicated locate this hole on the access road over the indicated position of the channel, probable depth 60 feet.

K10. Move to point halfway to the rim from the holes on the access road on a line between the indicated channel under the road and on the rim, probable depth 40 feet.

K11. Move to 50 feet southerly at right angle to the indicated direction of the channel, probable depth 40 feet.

K12. If the top of the Moenkopi is lower in hole K11 than in hole K10 move to 50 feet away from hole K11 southerly in the same direction as hole K10 to K11. If it is higher move to 50 feet northerly from hole K10 in the same direction as from hole K11 to hole K10, probable depth 40 feet.

K13. If holes K10, K11 and K12 have not bracketed a channel move to 50 feet either northerly or southerly along the line of section thru holes K10, K11 and K12 as indicated by the slope of the top of the Moenkopi, probable depth 40 feet.

K14, K15, K16 and K17. Move to 200 feet from the access road in the direction opposite to the Shinarump rim and locate a series of holes in a manner similar to that for holes K10, K11, K12 and K13, probable average depth 80 feet.

All Areas. Final Phase. After the designated drilling has been done in any or all channels, and it is agreed between the company representative and the DMEA Field Team that further drilling is justified and is approved by the DMEA Field Team 3,005 feet of additional drilling is to be available for a total of 25,000 feet in this project.

(d) Silver Dollar Mining Company has had more than 20 years of exploration, development and mining experience in the Coeur d'Alene district of Idaho in which period it has paid more than $1,000,000 in dividends. Its present operations consist of share the ore ventures in deep level mining where one entry is used to the common benefit of several neighbors in which its neighboring companies Sunshine Mining Company and Polaris Mining Company are the managing operators. However Silver Dollar Mining Company is actively searching for a new property to operate on its own account.

The project will be carried out under the company management by personnel assigned by it.

6. Estimate of costs.

(a) Independent contracts

Core drilling is excessively expensive to use where non-core drilling will furnish adequate information. Cuttings from none-core drilling are to be recovered and kept separate for each 2.5 feet interval of hole, thus furnishing samples for both logging and assaying where necessary. All holes are to be probed with a recording instrument. Hence, a fairly good record will be obtained of all dry holes without coring. Some coring will probably be essential in some dry holes for best exploration results. Experience to date indicates some holes will be wet and not provide adequate results without coring. Coring in these cases will be essential only in the vicinity of the horizon of greatest ore-probability which is the top two to three feet of the Moenkopi and the bottom ten feet of the Shinarump. The depth to the Moenkopi cannot be predicted with accuracy, particularly with step-out holes, hence where coring is used attempt is to be made to core the bottom 20 feet of each hole. This will bring about error in the distance cored in each hole, but the average should be about 20 feet.

Because it is cheaper both in contract price and time of company employees charged to the project attempt will be made to keep coring to a minimum. Consequently, some errors may be made in estimating that core is not essential in a given hole where it is found afterwards to need a core, and another nearby hole may be necessary to provide the core. Such extra hole or holes can be paid for readily by the savings in holes not cored, and is to be done up to the amount of the savings in contract price for core.

For the purpose of this estimate allowance will be made for 20 feet of core in only 50 percent of the holes. This is applied to the estimate by allowing 10 feet on all holes. The estimated drilling cost is listed on a separate sheet showing the details for each objective and phase of each channel.

	No. of Holes	Feet of Hole	Feet of Core	Core at $3.50 /ft.	Feet of Non Core	Non Core at $1.50 /ft.
CHANNEL A						
1st objective	23	1,305	230	$ 805.00	1,075	$ 1,612.50
2nd objective	12	1,435	120	420.00	1,315	1,972.50
3rd objective	29	2,270	290	1,015.00	1,980	2,970.00
Total	64	5,010	640	2,240.00	4,370	6,555.00
CHANNEL B						
Phase I	16	2,515	160	560.00	2,355	3,532.50
Phase II	18	4,200	180	630.00	4,020	6,030.00
Total	34	6,715	340	1,190.00	6,375	9,562.50
CHANNEL C						
Phase I	30	720	300	1,050.00	420	630.00
Phase II	15	300	150	525.00	150	225.00
Phase III	27	2,295	270	945.00	2,025	3,037.50
Phase IV	6	210	60	210.00	150	225.00
Total	78	3,525	780	2,730.00	2,745	4,117.50
CHANNEL D						
Phase I	11	2,660	110	285.00	2,550	3,825.00
Phase II	6	1,590	60	210.00	1,530	2,295.00
Total	17	4,250	170	595.00	4,080	6,120.00
CHANNEL E						
Phase I	20	565	200	700.00	365	547.50
Phase II	10	300	100	350.00	200	300.00
Total	30	865	300	1,050.00	565	847.50
CHANNEL G						
Phase I	5	150	50	175.00	100	150.00
CHANNEL H						
Phase I	8	240	80	280.00	160	240.00
CHANNEL J						
Phase I	6	220	60	210.00	160	240.00
CHANNEL K						
Phase I	17	1,020	170	595.00	850	1,275.00
CHANNELS A THRU K						
Final Phase	60	2,005	600	2,100.00	2,405	3,607.50
Total	319	25,000	3,190	$11,165.00	21,810	$32,715.00

The estimate of time a bulldozer is to be required varies with the size of the bulldozer available. The estimate of the cost of bulldozers in the project area are for D6, $13.00; D7, $15.00, and D8, $18.00 per hour. The estimate of both time and dollars which follow are based upon the use of a D7 and are to be adjusted proportionately as to time if a D6 or D8 size bulldozer is used. The estimate of time required is based upon the number of drill sites per hour the bulldozer will prepare. And where access roads to drill site areas are essential estimates are based upon the number of feet per hour the dozer will build.

Estimates for the use of a bulldozer for each phase of each channel follow:

	No. of Sites Per Hour	No. of Sites	Feet per Hour	Feet	No. of Hours	@$15.00 /hr.
CHANNEL A						
1st Objective	1	23			23	$ 345.
2nd Objective	1/3	12			36	540.
3rd Objective	1/2	29			58	870.
					117	1,755.
CHANNEL B						
Phase I	1/2	16			32	480.
Phase II	1/2	18			36	540.
					68	1,020.
CHANNEL C						
Phase I	1	30			30	450.
Phase II	1	15			15	225.
Phase III	1/3	27			81	1,215.
Phase IV	1	6			6	90.
					132	1,980.
CHANNEL D						
Phase I	1/3	11			33	495.
Phase II	1/2	6			12	180.
					45	675.
CHANNEL E						
Phase I	1	20			20	300.
Phase II	1	10			10	150.
					30	450.
CHANNEL G						
Phase I	1/2	5			10	150.
CHANNEL H	1	8			8	120.
CHANNEL J	1/3	6			18	270.
CHANNEL K						
Access Road			50	2400	48	720.
Phase I	1/3	9			27	405.
					75	1,125.
ALL CHANNELS						
Final Phase	1	60			60	900.
					563	$8,445.

(b) Labor, supervision, and consultants.

The scale of wages for labor to be employed on an hourly basis are as follows:

Foreman	$ 2.50 per hour
Compressor and Jack hammer operator	2.00 " "
Sampler and common labor	2.00 " "

Adjusted to include overtime on a 6 day week schedule this will average:

Foreman	$ 2.708
Compressor and Jack hammer operator	2,167
Sampler and common labor	2.167

Engineers and geologists will be paid $30.00 a day plus a $10.00 a day fixed travel allowance.

It is anticipated that drilling will average 200 feet a day and therefore require up to 125 days for the project.

One foreman and one sampler is to be on the job full time while drilling.

One Engineer-Geologist is to be on the job full time while drilling.

For 125 days on a 6 day week schedule this will cost:

Foreman	$ 2,708.00
Sampler	2,167.00
Engineer-Geologist	5,000.00
Total	$ 9,875.00

One compressor and Jack hammer operator will be on the job on a six day week schedule while the bulldozer operates, plus 30% for stand-by while the bulldozer is down for repairs. Total dozer time is estimated at 563 hours. Standby time at 30% is 169 hours for a total of 732 hours; at $2.167 per hour this amounts to - $ 1,586.24

Total labor and supervision $11,461.24

(c) Operating materials and supplies.

The following are estimated for use with the compressor:

Gasoline at 5 gal. per day for 70 days 350 gal. at $.35	$122.50
Lube oil at 1 qt. per day for 70 days. 70 qts. at $.45	31.50
Drill steel 1 - 7½ foot length at $12.98 each	12.98
1 - 5½ foot length at 10.37 each	10.37
1 - 3½ foot length at 8.37 each	8.37
Drill bits. 7 at $1.75 each	12.25
Powder. 35% at $22.50 /cwt. 500 lbs.	112.50
Caps. At $2.55 per 100. - 300	7.65
Fuse. At $12.56 per 1000 feet. - 1500 feet	18.84
	$336.96

Supplies for care of cuttings and core will consist of 10 lb. size paper grocery sacks and wooden or paper core boxes.

At 2.5 feet of cuttings per sack for 25,000 feet (cuttings recovered in core as well as non-core drilling) requires 10,000 sacks at $5.00 per 1000, this amounts to - - $ 50.00

Core recovery is expected to be about 80%. Approximately 50% of core recovered is expected to be preserved. From the 3190 feet of core drilling allowed for 1280 feet is expected to be preserved. Core boxes are estimated at 30 cents per foot of core preserved which amounts to - - $384.00

The quantity of drilling water that will be required is in indirect relationship to the amount of drilling and can be only a guess. One hole in 20 is estimated to require water, hence 16 holes are estimated to be drilled wet. One tank of 2000 gal. capacity is required per hole. Based upon 1956 experience each trip cost $8.00 ; 16 holes at $8.00 /hole - - $128.00

Total materials and operating supplies - $898.96

(d) Operating equipment.

A compressor complete with jack hammer and hose is essential for drilling and blasting rocks too large for removal by the bulldozer in the drillsite area and along access roads. This is available for rent at $200.00 per month. For an estimated 30% of the rental period the bulldozer will be down for repairs. Therefore this rental item is estimated at four months, although the estimated bulldozer time is 70 days. Total estimated cost four months at $200.00 is $800.00

(e) Rehabilitation and repairs.

None.

(f) New building, improvements, installations.

None.

(g) Miscellaneous.

Analytical work.

The number of samples to be assayed is in indirect relationship to the amount of exploration work done, under which circumstance an estimate is little better than a guess. However it is estimated that an average of one assay will be made for every three holes drilled. For 319 holes this would be 107 assays which at $3.00 each amounts to $321.

Workmen's compensation amounts to	2.44%	of payroll.
Federal Unemployment tax amounts to	2.70%	" "
Federal Insurance Contributions Act amounts to	2.25%	" "
Federal Unemployment tax for employment of more than four persons	.30%	" "
Total	7.69%	of payroll.

7.69% of $11,461.24 is $881.37.

(h) Contingencies.

No specific item for contingencies is included because certain alternative holes will not be drilled, and savings from these cancellations are to be set up for contingencies.

Summary.

(a)	Independent Contracts:	
	21,810 feet of non-core drilling	$ 32,715.00
	3,190 feet of core drilling	11,165.00
	563 hours of bulldozing	8,445.00
(b)	Labor and supervision	11,461.24
(c)	Material and supplies	898.96
(d)	Operating equipment	800.00
(e)	Rehabilitation and repairs	0.00
(f)	New buildings, improvements, installations	0.00
(g)	Miscellaneous	
	Analytical work	321.00
	Workmen's Compensation and payroll taxes	881.37
(h)	Contingencies	0.00
	Total -	$66,687 .57

A Form 7
-56)

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Date	Surname	Code
7-17	Knouse	700
~~7-17~~		~~700~~
7/19	Martin	130
7/19	Bishop	130
7/19	Kiilsgaard	130
7/19	Lemon	116
	Mittendorf	109
		220

JUL 19 1957

Mr. Elmer E. Johnston, President
Silver Dollar Mining Company
P. O. Box 122
W. 909 Sprague Avenue
Spokane 10, Washington

Re: Docket No. DMEA-4655 (Uranium)
Joker, et al., Claims
San Juan County, Utah

Dear Mr. Johnston:

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

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

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

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

Sincerely yours,

C. O. Mittendorf

Administrator

FLKnouse/izm 7-18-57
cc to: Mr. Knouse
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
DMEA FT Reg. 3 (2)

8623

Docket

July 18, 1957

Summary of Proposed Project

Object: Denial of application for exploration aid.

Docket No.: DMEA-4655

Commodity: Uranium

Applicant: Silver Dollar Mining Company
P. O. Box 122, W. 909 Sprague Avenue
Spokane 10, Washington

Property: Consists of 60 unpatented lode mining claims owned by Applicant as follows: Black Jack Nos. 1 through 28, and Black Jack Nos. 24B, 25B, and 26B; Poor Boy Nos. 1 through 5; North Star Nos. 1 through 16; and Joker Nos. 1 through 8, in unsurveyed secs. 4, 5, 6, 7, 8 and 17, T. 37 S., R. 17 E., San Juan County, Utah.

Date of Application: February 22, 1957

Amount of Application: $66,687.57

Referred to Region III: March 8, 1957

Field Examination made: April 29, 1957

Field Team Report received: July 9, 1957

Work Proposed: Exploration of Shinarump channels for uranium bearing ore indicated by 9 rim outcrops in the area, requiring an estimated 21,810 feet of non-core and 3,190 feet of core drilling in a maximum of 319 holes. Previous completed exploration on the property consists of 5,000 feet of rim stripping and almost 12,000 feet of core, non-core, and wagon drilling in 146 holes. This work resulted in the discovery of 700 tons of indicated ore averaging 0.56% U_3O_8, and 2,200 tons of inferred ore averaging 0.30% U_3O_8 along one indicated channel. Proposed drilling program to be done in three stages. In Stage I, a series of fences (lines of holes) would be drilled behind the 9 Shinarump outcrops about 200 feet apart with as many as 3 holes in each fence spaced about 100 feet apart. Stage II would consist of intermediate fences between Stage I fences, provided encouraging mineralization was found by earlier drilling. Stage III would provide for drilling out any mineralization found by Stage I and II work by offset holes drilled on 50-foot centers.

Estimated Costs:

Independent Contracts

21,810 ft. non-core drilling @ $1.50/ft.	$32,715.00
3,190 ft. core drilling @ $3.50/ft.	11,165.00
563 hrs. of tractor operating time	8,445.00

Labor and Supervision	$11,461.24
Materials and Supplies	898.96
Operating Equipment	800.00
Miscellaneous	
Analytical work, 107 samples @ $3/sample	321.00
Insurance and Payroll Taxes	881.37

Total Estimated Cost of Project $66,687.57
Government Participation @ 75% $50,015.68

Field Team Report - dated June 1957 by F. M Byers, Jr., USGS & N.H. Salsbury, USBM:

The property is located on the northernmost extension of a large mesa (Moss Back), and the Permian Cutler formation is exposed on the lower slopes of the Moss Back in the bottom of White Canyon to the east and Fry Canyon to the west. The Cutler formation is overlain by about 150 feet of Lower Triassic Moenkopi siltstone, and mudstone, a variable thickness (a few feet to 40 feet) of Shinarump (upper Triassic Chinle) sandstone, 160 feet of Lower Chinle mudstone and siltstone, and capped by about 70 feet of Moss Back Chinle sandstone.

The Applicant claims that a number of Shinarump channels exist on the property. The principal channel "A-A1" is the most thoroughly explored, and sufficient drilling has been done on which to base a structure contour map. The outcrop on the Fry Canyon side of the channel is scoured about 15 feet into the underlying Moenkopi, and the maximum thickness is about 40 feet. The largest part of the channel is about 200 feet in width. In the bottom of the channel outcrop exposure over a thickness of ½ to 1 foot and a width of 15 feet the conglomerate sandstone is stained with green and blue copper carbonates and limonite and has radioactivity of several times background or about 0.15% eU_3O_8. The underlying Moenkopi is thoroughly bleached for a thickness of 1-½ to 2 feet. Other channel exposures on the property claimed by the Applicant were examined and found to be at best only slight undulation of the Shinarump Moenkopi contact.

A small ore body has been partly drilled out within a few hundred feet of the Shinarump outcrop channel "A-A1". The thickness and grade of ore in 6 ore holes show a weighted grade of this 700 ton (indicated) ore body is 0.56% U_3O_8, with a thickness of 1 to 2.5 feet. Other drill holes along this channel, a distance of about 2,900 feet, indicate small ore bodies as follows:

Claim	Thickness (feet)	% U308	Inferred Ore (Tons)
Black Jack No. 9	1.0	0.15	200
" " " 9	4.0	0.22	700
" " " 2	1.0	0.78	500
" " " 3	2.0	0.50)	
" " " 3	1.0	0.10)	500
" " " 3	1.5	0.10)	
" " " 4	1.0	0.27	300
	TOTAL.....		2,200

The results of drilling to date indicate that ore bodies that might yet be found on channel "A-A1" would be in the 500-1,000-ton class. Furthermore, the extent of drilling done to date leaves only a minor portion of channel "A-A1" unexplored. Also, that further exploration of the channel would not discovery more than 2,000 tons of ore in several separated small bodies.

It is concluded from outcrop exposures and drilling that only channel "A" and possibly channel "B" fulfill the acceptable requirements for significant Shinarump channels.

Therefore, enough exploration has been accomplished on the property to show that any contained deposits are ~~to be~~ small and dispersed. Denial of the application is recommended.

Commodity Members Comments:

USGS, dated July 15, 1957, W. P. Williams:

"Main drawbacks on the property are: 1) the Applicant has already done 5,000 feet of rim stripping, 11,358 feet of rotary drilling in 123 drill holes, and 407 feet of wagon drilling; but a large ore deposit was not found; 2) two shallow channels are on the property but several other strucutres called 'channels' are mere undulations in the Shinarump member; 3) the single mine near the property has produced only 282 tons of ore; 4) the examining team has demonstrated that an undiscovered ore body on the property would have a maximum probably size of 1,000 tons. At a grade of 0.30 percent of U_3O_8, such an ore body would have a gross value before mining of about $46,000. The proposed exploration project would cost an estimated $67,000.

"In a well prepared report the examining team has shown that adverse features of the property appear to far outweigh favorable ones. For that reason I am in agreement with the findings of the field examiners and their recommendation that the application be denied."

USBM, dated July 17, 1957, James Paone:

Agrees with Field Team recommendation.

Conclusions and Recommendations:

The examination of the property indicates that only small dispersed ore bodies are likely to be found on the property. Also, the additional ore potential that may be discovered in the principal channel "A-A1" should not exceed a total of 2,000 tons in small ore bodies. Since this channel has been extensively explored by the Applicant, additional exploration with Government aid is not deemed necessary. Other channel exposures on the property show little, if any, indications of uranium mineralization. Therefore, the probability of making a significant discovery on the property is not considered promising and the application should be denied.

F. L. Knouse

F. L. Knouse, Acting Director
Div. of Rare & Misc. Metals

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DMEA
RECEIVED JUL 18 1957

DATE	INITIALS	CODE
7/18	C	220
"	FLK	700

July 17, 1957

4655

Uranium
Silver Dollar Mining Company
Joker, North Star, Poor Boy, etc.
San Juan County, Utah

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

Field Team Report

6/28/57 7/16/57

Yes [ ] No [ ]

Yes [ ] No [ ]

Yes [ ] No [ ]

Yes [ ] No [ ]

Yes [ ] No [ ]

7. Describe the method you desire:

8. Your recommendation:
a. Lease [ ]
b. Permit [ ]
c. Evidence of mineralization [ ]
d. Policy [ ]
e. Proposed exploration action [ ]
f. Alternate exploration action [ ]
g. None [ ]
h. _____ [ ]

9. Action advised:
a. Obtain information from applicant [ ]
b. Refer to Field Team [ ]
c. Permit [x]
d. Advise the Field Team [x]
e. Confer with _____
f. Discuss with Field Team [ ]
g. Suggest alternate plan [ ]
h. Request another examination [ ]
i. Approval [ ]
j. _____ AEC action

10. Remarks (Use back of page if necessary)

IN REPLY REFER TO:

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

July 15, 1957

Memorandum

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

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

Subject: Review of field examination report, DMEA 4655, (uranium), Silver Dollar Mining Company, Joker et al claims, White Canyon district, San Juan County, Utah

The DMEA examining team report that conditions are not favorable on the applicant's property for the discovery of large, new ore deposits.

Main drawbacks on the property are: 1) the applicant has already done 5,000 feet of rim stripping, 11,358 feet of rotary drilling in 123 drill holes, and 407 feet of wagon drilling; but a large ore deposit was not found; 2) two shallow channels are on the property but several other structures called 'channels' are mere undulations in the Shinarump member; 3) the single mine near the property has produced only 282 tons of ore; 4) the examining team has demonstrated that an undiscovered ore body on the property would have a maximum probable size of 1,000 tons. At a grade of 0.30 percent U_3O_8, such an ore body would have a gross value before mining of about $46,000. The proposed exploration project would cost an estimated $67,000.

In a well prepared report the examining team has shown that adverse features of the property appear to far outweigh favorable ones. For that reason I am in agreement with the findings of the field examiners and their recommendation that the application be denied.

W. P. Williams

W. P. Williams

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DMEA
RECEIVED JUL 16 1957

DATE	INITIALS	CODE
7-16	C	220
"	FLK	700

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

June 28, 1957

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DMEA
RECEIVED JUL 9 1957

DATE	INITIALS	CODE
7-10	C	220
		130
7/15	P.K.	220
"	FLK	700

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 4655 (Uranium) Silver Dollar Mining Company (Joker, North Star, Poor Boy and Black Jack Claim Groups) San Juan County, Utah - Joint Report of Examination

Enclosed are the original and three copies of the Joint Report of Examination on the subject property by M. H. Salsbury, USBM, and F. M. Byers, Jr., USGS.

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

W H King
W. H. King
Executive Officer

U. S. BUREAU OF MINES
SOUTHWEST EXPERIMENT STATION
JUL 1 1957
TUCSON, ARIZONA

Reviewed by
DMEA OPERATING COMMITTEE
7-12-57
(date)

ON-SITE EXAM. REPORT

MINERAL DEPOSITS
IN REPLY REFER TO:
DMEA
RECEIVED
JUN 26 1957

UNITED STATES
DMEA DEPARTMENT OF THE INTERIOR
DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

JUN 27 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
Grand Junction, Colorado
RECEIVED JUL 9 1957

U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

June 25, 1957

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JUN 28 1957

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Memorandum

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

Through: E. N. Harshman

From: J. William Hasler

Subject: Transmittal of the joint engineering and geologic report of examination by F. M. Byers, Jr., and M. H. Salsbury, DMEA docket 4655 (Uranium), Silver Dollar Mining Company, Joker, North Star, Poor Boy, and Black Jack claim groups, San Juan County, Utah.

The Silver Dollar Mining Company, Spokane, Washington, applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on 60 claims in the White Canyon Mining District, San Juan County, Utah. The application was referred to the field and an examination [illegible]de on April 29, 1957, in company with Mr. Evan Oscarson, th[illegible]'s geologist.

Explo[illegible]sting of an access road network, 5,000 feet of rim stripping, [illegible] of rotary non-core drilling in 123 holes, and 407 feet of wagon dr[illegible] holes has already been done without finding sufficient o[illegible] a mining operation.

There are two [illegible]ther shallow channels in the area which have been explored b[illegible]le drilling and a number of other exposures of thickened Shina[illegible]ts which are unfavorable. The applicant designates them as [illegible]owever, this may be doubtful. In any case the exposures are b[illegible]ear to have little significance.

Because of results of drill[illegible] and the lack of mineralization and generally unfavorabl[illegible]tics in all of the Shinarump outcrops exposed by strippin[illegible]cluded that the frequency of ore occurrence on the pro[illegible]w. It is believed that the only well-defined channel on [illegible]rty has already been exposed clearly enough to show the ore [illegible] are likely to be small and infrequent. Other channels in the [illegible]e proven to be unfavorable. Because of these negative results, it [illegible]hat the chances of finding ore in significant quantities are not [illegible] is, therefore, recommended that the application for government as[illegible] be denied.

Reviewed by
DMEA OPERATING COMMITTEE
7-12-57
(date)

Enclosed are twelve copies of the joint report and twelve copies each of figures 1, 2, and 3.

The geologists for the Atomic Energy Commission working in the White Canyon District provided the examining team with much pertinent information concerning the applicant's property. The ore reserve section of the Atomic Energy Commission was also consulted relative to the appraisal of the property. I concur with the conclusions and recommendations of the examining team, that the application be denied.

J. William Hasler

J. William Hasler,
Geologist

JWH/mlr

Enclosures

FOR UNITED STATES GOVERNMENT USE ONLY

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

TRANSMITTED
JUN 28 1957

DEFENSE MINERAL EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

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DMEA 4655

Silver Dollar Mining Company

Joker, North Star, Poor Boy, and Black Jack claim groups

San Juan County, Utah

Uranium

Joint Engineering and Geologic Report

by

F. M. Byers, Jr.
Geological Survey

M. H. Salsbury
Bureau of Mines

June 1957

Reviewed by
DMEA OPERATING COMMITTEE
7-12-57
(date)

DMEA 4655

SILVER DOLLAR MINING COMPANY

JOKER, NORTH STAR, POOR BOY, AND BLACK JACK CLAIM GROUPS

SAN JUAN COUNTY, UTAH

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DMEA 4655

INTRODUCTION AND SUMMARY

The Silver Dollar Mining Company, Post Office Box 122, Spokane 10, Washington, applied on March 11, 1957 for Government assistance in exploration for uranium by drilling on 60 located claims purchased or located by the applicant in the White Canyon Mining district, San Juan County, Utah. Exploration of Shinarump channels indicated by 9 rim outcrops in the area was proposed, requiring an estimated 25,000 feet of non-core drilling and 3,190 feet of core drilling in a maximum of 319 holes at a cost of $66,687.57. Government participation at 75 percent would be $50,015.68.

The property was visited on April 29, 1957 by a DMEA examining team accompanied by Evan Oscarson, the applicant's geologist.

Exploration consisting of an access road network,5,000 feet of rim stripping, 11,358 feet of rotary non-core drilling in 123 holes, and 407 feet of wagon drilling in 23 holes has already been done without finding sufficient ore to justify a mining operation. There are two definite narrow, and rather shallow channels in the area which have been exposed by considerable drilling, and a number of other exposures of thickened Shinarump sediments which are unfavorable. The applicant designates them as channels but this is doubtful. In any case, the exposures are barren and appear to have little significance.

Because of the drilling results to date on channel "A-Al", and the lack of mineralization and generally unfavorable characteristics in all the Shinarump outcrops exposed by stripping, it is concluded that the frequency of ore occurrences is low on the property. Channel "A-Al" has been explored extensively, because it was more favorable than any of the others. It has been drilled from the Fry Canyon rim eastward about 3,000 feet in an irregular fence pattern on 25 to 200-foot centers. This channel, as well as some of the others, probably extends across Fry Mesa, outcropping on two rims. Near the Fry Canyon rim, a small indicated ore body of 700 tons was found, but it was not large enough to justify driving an adit from the rim. Inferred ore in channel "A-Al" is computed at about 2,000 tons in several small bodies. Part of the proposed DMEA drilling was planned to offset ore holes and establish the presence of enough ore to justify a tunnel. The balance of the proposed DMEA drilling would extend exploration of channel "A-Al" through to the White Canyon rim, and determine the trend of other Shinarump channels, including channel "B", which crops out on an adjoining property and has been explored through adit workings producing a few hundred tons of ore.

It is believed that the only well-defined channel on the property, channel "A-Al", has already been explored throughly enough to show that ore deposits are likely to be small and infrequent. Other channels including channel "B" are not favorable, judging from the results of rim stripping, the Bell mining operation, and a limited amount of drilling.

Further exploration does not appear to be justified, and denial of the DMEA application is recommended.

ACKNOWLEDGMENTS

Raymond N. Larsen, AEC project geologist for the White Canyon district, provided pertinent information concerning the applicant's property, and provided the examining team with a legible base map of the applicant's claims (fig. 3).

Data on ore reserves and production in the area was obtained from Atomic Energy Commission records.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The claims included in the DMEA application are in two groups, one of 4 claims, and one containing 56 claims. They are in unsurveyed sections 4, 5, 6, 7, 8, and 17, T. 37 S., R. 17 E., San Juan County, Utah, and cover a portion of the top and benches of Moss Back, and extend from the Fry Canyon rim to the White Canyon rim (figs. 1 and 2). The property is reached over 7 miles of ungraded access road joining improved Utah State Highway 95 about 1 mile northwest of the AEC Natural Bridges camp near the junction of Highway 95 and the Red Canyon access road. The AEC camp is 50 miles from Blanding, Utah and 260 miles from Grand Junction, Colorado, the nearest major supply center.

The surface of the claims consists of benches of Shinarump sediments and lower Chinle slopes below Moss Back sediments capping the mesa.

Preparation of drilling sites has not been particularly difficult. The arid climate of the region at altitudes around 6,000 feet is subject to extremes of temperature and violent storms of short duration both summer and winter. Year-around surface operations are usually feasible with possible interruptions during late winter and early spring.

Ore from the area can be marketed at the mill in Monticello, Utah, 75 miles from the property, operated by the National Lead Company for the Atomic Energy Corporation, and at the AEC White Canyon buying station, 34 miles northwest of the property.

There are no unusual problems of supply, labor, power, or ore marketing except that the cost of supplies and services are high because of the remote location. A domestic water supply is obtainable at the Fry Canyon spring within ten miles of the property. Supplies of drilling water are limited and when water stored in catchment basins is exhausted, water must be hauled as much as 40 miles. Dry drilling techniques are utilized wherever possible. The proposed exploration would be done by a private drilling contractor who would furnish necessary equipment and labor.

HISTORY AND PRODUCTION

The recent history of the White Canyon Mining district dates from the search for uranium following World War II, although exploration for copper antedates this period by many years. Extensive exploration has been carried on by the Atomic Energy Commission and private operators.

In 1951 claims of the White Canyon Mining Company on Fry Point (fig. 2),and others, were examined in connection with Docket No. DMEA 1931. An exploration program on the White Canyon No. 1 and Point claims on Fry Point 4 miles northwest of the applicant's property, and on the Frey No. 4 claim 2 miles southeast was recommended by the examining team, but the project work was not carried out. These claims, as well as several others on Fry Point, have since been explored privately.

There has been uranium ore mined from Shinarump channels above White Canyon, Red Canyon, and Fry Canyon. While production from a number of mines has been substantial, the major production has come from mines between Fry Canyon and Red Canyon. There has been no ore mined from the applicant's claims to date. The only production near the applicant's property has been from the Bell mine, amounting to 252 tons of ore averaging 0.20 percent U_3O_8 from a small channel which, projected towards the applicant's Poor Boy No. 2 and North Star No. 9 claims, is designated channel "B". The White Canyon No. 1 mine on Fry Point, 4 miles northwest of the applicant's claims (fig. 2), has furnished the nearest significant production - 5,971 tons with an average content of 0.25 percent U_3O_8. Three other operations, including the Fry No. 4 mine, within five miles of the applicant's property, have produced from 500 to 1,000 tons each with the ore averaging from 0.16 to 0.20 percent U_3O_8.

OWNERSHIP AND EXTENT

The 60 claims now owned by the Silver Dollar Mining Company consist of 25 claims purchased from the original locators, William Shearer and associates, and 35 claims located later by or for the applicant company. The list of claims furnished with the application did not specify which were purchased. Mr. Oscarson stated that, to the best of his knowledge, those claims with original recording dates in November 1954 and April 1955 were purchased. The balance was located by the applicant. On this basis the purchased claims are as follows:

	Original Recording Data			Amended Location Data		
	Book	Page	Date	Book	Page	Date
Black Jack Nos. 1 and 2	231	200	11/15/54	108 138	243-244 151	5/26/56 8/29/56
Black Jack No.3	231	201	11/15/54	108 148	245 309	5/26/56 12/11/56
Black Jack Nos. 4-8	231	201-203	11/15/54	108 148	246-250 310-314	5/26/56 12/11/56
Poor Boy Nos. 1 & 3	231	204-205	11/15/54	108 148	230-232 519-520	5/26/56 12/18/56
Poor Boy No. 2	231	206	11/15/54	108 136	231 373	5/26/56 8/20/56
Poor Boy Nos. 4 & 5	231	204-205	11/15/54	108	233-234	5/26/56
Joker Nos. 1-6	289	417-419	4/ 1/55	108	235-239	5/26/56
North Star Nos. 1, 2, & 3	289	414-415	4/ 1/55	108	240-242	5/26/56

Claims	Original Recording Data			Amended Location Data		
	Book	Page	Date	Book	Page	Date
North Star Nos. 4, 5, & 6	289	415-416	4/1/55			

Claims located by Elmer E. Johnston for the applicant company and transferred to it later are as follows:

Black Jack Nos. 9-11	108	253-254	5/26/56	148	315-317	12/11/56
Black Jack No. 12	108	255	5/26/56	138	152	8/29/56
Black Jack Nos. 13-23	108	255-260	5/26/56	148	318-328	12/11/56
Black Jack Nos. 24-28	130	391-393	7/21/56			
Black Jack Nos. 24(B), 25(B), 26(B)	146	275-277	11/19/56	148	467-469	12/15/56
Joker Nos. 7 and 8	108	251	5/26/56			
North Star No. 7	108	252	5/26/56	148	521	12/18/56
North Star Nos. 8 and 9	108	252-253	5/26/56	138	152-153	8/29/56
North Star Nos. 10-16	140	149-152	9/17/56			

All claims were held in the name of Elmer E. Johnston, president of the Silver Dollar Mining Company, and transferred after that company was licensed to do business in Utah.

There are conflicts between the applicant's Joker Nos. 1, 2, and 3, Poor Boy Nos. 2 and 3, North Star No. 9, and Black Jack No. 9 claims, and other claims which lie between the applicant's ground and certain sections of the rim which they do not control. The extent of these conflicts

is not shown on the applicant's map nor has it been determined to date. In planning the proposed drilling, the applicant avoided placing any holes within 1,200 feet of those portions of the rim not controlled by them.

The applicant did not furnish copies of deeds from the original locators on purchased claims or from Johnston to the company. Because of the probable recommendation for denial of the application, the applicant was not asked to resolve claim conflicts, nor was any further check of property rights attempted.

PRESENT STATUS

Exploration and development

A substantial amount of exploration has been done on the property. Nearly every portion of the Shinarump outcrop which showed any evidence of thickening has been stripped, requiring 5,000 feet of bulldozing, a total of 11,358 feet of rotary non-core drilling in 123 holes, and 407 feet of wagon drilling in 23 holes has been done at locations shown in figure 2. In three of the rotary holes, coring was tried with poor results, so no further coring was attempted. The drilling was concentrated largely along the projected line of channel "A", first to determine the channel width and trend, and later to drill out two areas where ore-grade mineralization was found. Two other fences of holes were drilled behind the rim outcrops on channels "B" and "E" without discovering mineralization or establishing channel trends. The drilling program does not appear to have been systematically planned.

Mining and Milling Equipment and other Facilities

There are no buildings or equipment on the property. All proposed work would be contracted to independent operators.

GEOLOGY

The property of the Silver Dollar Mining Company is located on the northernmost extension of a large mesa known as Moss Back, the type locality of the Moss Back member of the upper Triassic Chinle formation (see figure 2). The Permian Cutler formation is exposed on the lower slopes of Moss Back and in the bottoms of White Canyon to the east and Fry Canyon to the west. The Lower Triassic Moenkopi formation is about 150 feet thick and consists of interbedded reddish brown siltstone and mudstone. The Shinarump sandstone member of the Upper Triassic Chinle formation ranges from a few feet to as much as 40 feet in thickness in the deepest part of channel "A" (see figure 3). Overlying the Shinarump sandstone member is about 160 feet of Lower Chinle mudstone and siltstone. This is overlain in the southern part of the property (figure 3) by a massive thick ledge-forming sandstone 70 feet thick. This sandstone is the Moss Back member of the Chinle formation and forms most of the top surface of Moss Back. The upper part of the Chinle formation and the Upper Triassic Wingate formation are exposed in buttes a few miles south of the property (figure 2).

ORE DEPOSITS

Shinarump channels

The applicant's representative claims that a number of channels exist on the property. He has designated channel exposures as seen in outcrop, inasmuch as the applicant's channel "A" is labeled channel "A-1" on the White Canyon side to the northeast and channel "A" on the Fry Canyon side to the southwest (fig. 3). A similar designation has been followed in designating channels "E" and "E-1" exposures. Exposures of channels "B", "C", "D", "F", "G", "H", and "J" (fig. 3) are given separate capital letter designations, inasmuch as the applicant's geologist was uncertain as to whether or not certain channels could be connected across the promontory beneath the overlying formations. In the description of the principal channel, the designation, channel "A-A1", will be used in this report.

Channel "A-A1" is by far the most thoroughly explored and the best known of any of the channels claimed by the applicant. Sufficient drilling has been done on which to base a structure contour map, which was prepared by R. N. Larsen, AEC geologist (fig. 3). As seen in outcrop on the Fry Canyon or southwest side of the Moss Back promontory, channel A-A1" is scoured about 15 feet into the underlying Moenkopi formation. The maximum thickness in the center of the channel is about 40 feet. The occurrence of 10 to 15 feet of scour is also borne out by the structure contours (fig.3). The lowest part of the channel is about 200 feet in width. The south bank of channel "A-A1" is steeper than the north bank. This relation is also

shown by the structure contours (fig. 3). In the very bottom of the channel at the base of the south bank, the lower one-half to one foot of Shinarump conglomeratic sandstone is stained with green and blue copper carbonates and limonite. This copper-iron stained zone has a radioactivity several times background or about 0.15 percent eU_3O_8. This mineralized zone is exposed for a width across the channel of about 15 feet. The underlying Moenkopi formation is bleached through a thickness of 1-1/2 to 2 feet. Toward the northeast bank of the channel the Moenkopi formation is less altered.

Other channels claimed by the applicant were examined by the examining team, excepting channels "B" and "D" which are not exposed on the applicant's property. The applicant's channel "B" is supposedly the same channel that is exposed in outcrop on the Bell claims, from which 252 tons of ore containing 0.20 percent U_3O_8 were produced. However, there is little evidence for channel "B" extending onto the applicant's claims, except for a slight indentation of the structure contours toward the east on North Star 8 and 9 claims (fig. 3). Exposures of channels "C", "E", "F", "G", "H", and "J" were visited by the examining team and found to be at best only a slight undulation of the Shinarump Moenkopi contact. Channel "D" at the southern end of the applicant's claims was not visited by the examining team, inasmuch as the applicant considered it no better than the other exposures that had been visited.

A small ore body has been partly drilled out on the Black Jack 9 claim within a few hundred feet of the Shinarump outcrop, also exposed on the same claim (fig. 3). The thickness and grade of ore in 6 ore-bearing drill holes constituting the ore body on Black Jack 9 claim are presented below:

Thickness (feet)	Percent U_3O_8
2.5	1.5
1.0	0.26
1.0	0.23
1.0	0.30
1.5	0.34
2.5	0.11

These six holes are clustered near the northwest corner of the Black Jack 9 claim and constitute the basis of an indicated ore body containing approximately 700 tons. The average weighted grade of this 700-ton ore body is 0.56 percent U_3O_8; however, this figure is strongly affected by the 2-1/2 feet of 1.5 percent grade. More likely the average grade would be closer to 0.30 percent U_3O_8.

Drill holes other than the six holes used to compute the indicated ore above are tabulated below along with the estimated size of the inferred ore bodies computed from the drill holes.

Claim	Thickness (feet)	$\%U_3O_8$	Inferred Ore (tons)
Black Jack 9	1.0	0.15	200
Black Jack 9	4.0	0.22	700
Black Jack 2	1.0	0.78	500
Black Jack 3	2.0	0.50)	
Black Jack 3	1.0	0.10)	500
Black Jack 3	1.5	0.10)	
Black Jack 4	1.0	0.27	300
Total inferred ore			2,200

Based on past production records in the area, the average grade of this inferred ore tonnage is estimated to be about 0.30 percent U_3O_8.

The results of drilling by the Silver Dollar Mining Company to date indicate that ore bodies that might yet be found on channel "A-Al" would be in the 500- to 1,000-ton class. Furthermore, the extent of drilling done to date leaves only a minor portion of channel "A-Al" unexplored (fig. 3). Hence it is the opinion of the examining team that further exploration of channel "A-Al" would not discover more than 2,000 tons of ore in several separated small bodies. It is also generally agreed among U. S. Geological Survey and AEC geologists who have worked in the area, that Shinarump channels that are exposed to erosion within distances of a few thousand feet at either end are likely to have had some or much of the original uranium content present removed by ground-water leaching. This opinion has been recently substantiated by drilling programs, notably on the Ula channel by Radium King Mines, in which ore bodies close to the outcrop are small and spotty and become larger and more continuous as the Wingate sandstone is approached. According to R. N. Larsen, U.S. AEC geologist in charge of the White Canyon AEC camp, oxidized small ore bodies of a few hundred tons are likely to have been precipitated by supergene enrichment at or near the channel outcrop on the downdip side. Shinarump channels covered by at least 100 feet of lower Chinle overburden are not likely to be leached of uranium unless they are open at both ends like channel "A-Al".

PROPOSED EXPLORATION

The proposed exploration would require an estimated 25,000 feet of non-core drilling and 3,190 feet of core drilling in 319 holes at a cost of $66,687.57. Government participation at 75 percent would amount to $50,015.68. The cost estimate presented is supposedly based on the lowest of six bids submitted by independent drilling contractors. However, the unit prices used are not those quoted in the bid made by the Southern Geophysical Company, Inc. of Grand Junction, Colorado, which appears to be the low bid for the estimated proportions of core and non-core drilling.

The proposed program calls for three stages of drilling. In stage I a series of fences would be drilled behind 9 Shinarump outcrops, which the applicant considers to be channel scours in order to delineate the channels. Fences would be about 200 feet apart with as many as three holes in each fence about 100 feet apart. Stage II would consist of exploring the channels thoroughly if their occurrence can be established in stage I. Holes in stage II are to be intermediate fences between stage I fences approximately 100 feet apart with three holes in each fence on 100-foot centers. A third and final stage would provide for drilling out any mineralization found in stages I and II by means of offset holes on 50-foot centers. Stage I drilling would not be necessary in channel "A" which has already been delineated. Stage II might be required in certain parts of channel "A". Stage III drilling as proposed by the applicant would probably not conform with DMEA aims.

The applicant has supported the drilling proposal by a very detailed analysis with meticulous instructions for locating holes. The map furnished, however, was on a small scale and poorly executed. The relationship between previous drilling and proposed drilling was somewhat obscure. A larger scale tracing the applicant's representative furnished the examining team, showed the location of previous drilling but hole numbers were not given. In view of the recommendations to be made on the proposed project, the applicant has not been asked to clarify the drilling plan, and no revision of the plan was suggested by the examining team.

CONCLUSIONS AND RECOMMENDATIONS

In summary, the applicant's property at the north end of Moss Back lies in a favorable area for the occurrence of Shinarump channels (fig. 2). Also favorable is the fact that several drill holes have penetrated material of ore grade in a well defined Shinarump channel; namely channel "A-A1". However, the following factors are considered detrimental to the applicant's proposed drilling program:

1) Extensive drilling already done by the applicant has demonstrated that the expected ore bodies would be in the 500-1,000 ton class.

2) Extensive drilling by the applicant on channel "A-A1" has left very little area along the channel available for further exploration.

3) The fact that channel "A-A1" is open at both ends and with only a small amount of overburden indicates that ore bodies that were originally in the channel are likely to have been leached out during the erosion process.

It is concluded from a study of outcrop exposures and previous drilling that only channel "A", and possibly channel "B", fulfill the accepted favorability requirements for significant Shinarump channels. Enough exploration has already been accomplished on them to show that any contained deposits are likely to be small and ~~wide~~ dispersed. Denial of the application under docket DMEA 4655 is recommended.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JUNE 1957
DOCKET 4655

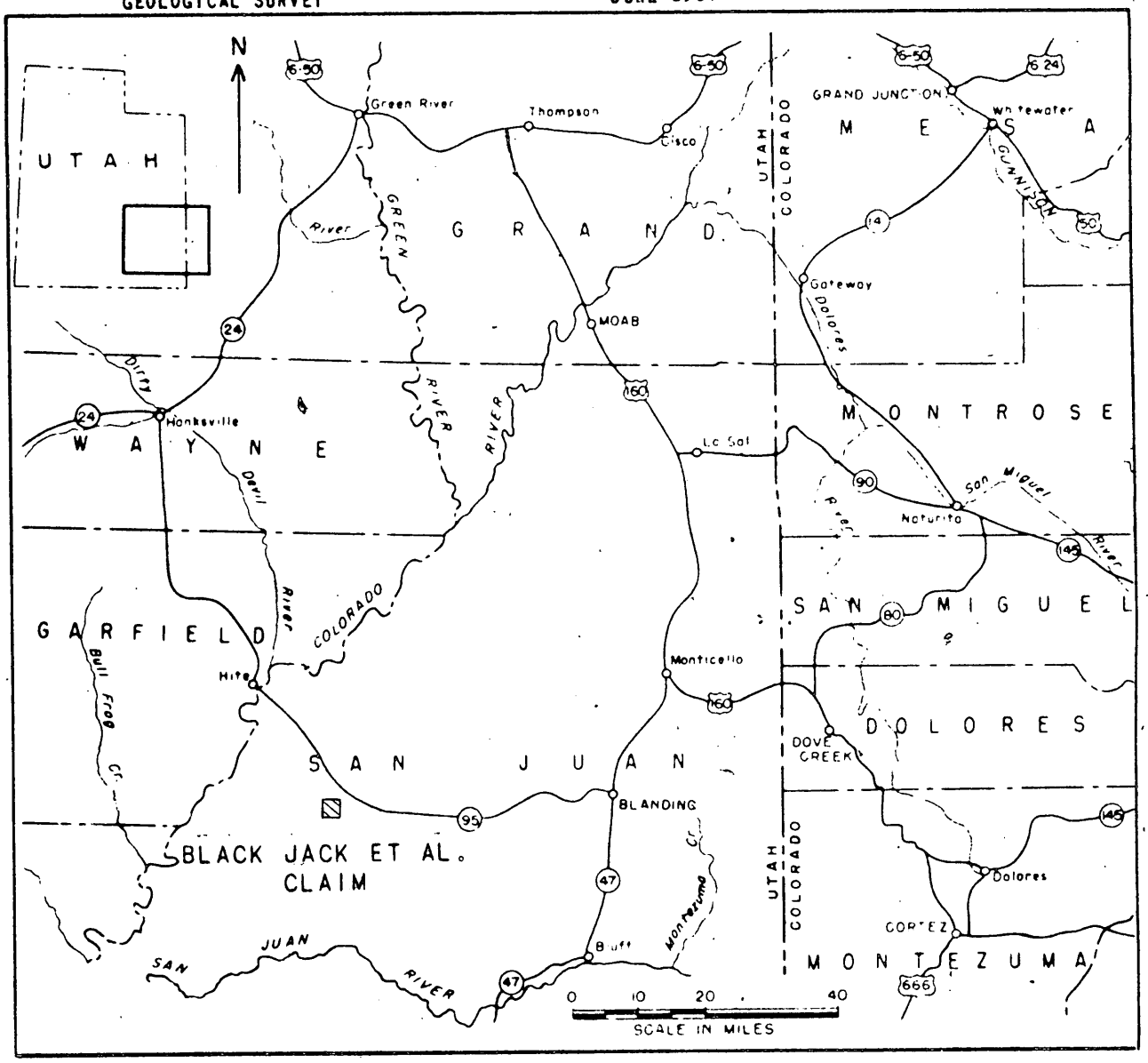

FIGURE 1.--LOCATION MAP, JOKER, NORTH STAR, POOR BOY AND BLACK JACK CLAIMS, SILVER DOLLAR MINING COMPANY, SAN JUAN COUNTY, UTAH.

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DMEA Form 7
(12-56)

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Date	Surname	Code
7/1	Knouse	700
7/1	Ellis	700
7	Mittendorf	700
7/2	C	220
		700

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Department of the Interior

DMEA

COLLECT

L. D. JOHNSON
CLEVELAND MINING COMPANY
W. 909 SPRAGUE
SPOKANE, WASHINGTON

TELEPHONE CALL JULY 1, DMEA 4655. FIELD TEAM REPORT MINING

PREPARED DENVER. EXPLORED SOON.

C. O. Mittendorf

C. O. MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION
ADMINISTRATION

FLKnouse/izm 7-1-57
cc to: Mr. Knouse
Admr.'s Reading File
Confirmation copy
DMEA FT Reg. 3 (2)

8623

~~Mr. Ellis~~
~~Mr. Knouse~~
Docket file

June 6, 1957

Mr. Elmer E. Johnston
Silver Dollar Mining Company
P. O. Box 122
Spokane 10, Washington

Dear Elmer:

In response to your telephone call of June 5, I have checked with DMEA on the status of your application, Docket 4655. I was told that it is being processed and that you will be informed as quickly as possible on their decision.

All of us working with DMEA are aware that the time we take to process an application imposes a strain on the applicant; therefore, we try to handle them as rapidly as we can. Nevertheless, the fact that we must first review the application, then schedule a field examination at a time mutually acceptable to our field men and the applicant, then prepare the field report, and finally have the application and report reviewed by Bureau of Mines and Survey commodity men and a decision rendered by DMEA takes a lot of time. Our justification for using this procedure, of course, is that by drawing on so many opinions we protect the Government from unsound investments, or, in the case of approved contracts, by preparing a program having a reasonable chance for success, which is acceptable to the applicant and the Government.

I was just thinking that 20 years ago at this time, we were building the dredge on Orofino Creek. A lot of water has gone down that stream since then.

Please give my best regards to Evan.

Sincerely,

cc: E. W. Ellis, 4445

Thor H. Kiilsgaard
Staff Assistant for DMEA

SILVER DOLLAR
Mining Company

W. 909 SPRAGUE
SPOKANE 4,
WASHINGTON

March 29, 1957

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4/1	C	220
		700

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

Atten: Mr. C. O. Mittendorf, Administrator.

Re: Docket No. DMEA-4655 (Uranium)
Joker, et al., Claims
San Juan County, Utah

Dear Mr. Mittendorf:

We thought your office would appreciate copies of other bids we received with respect to the drilling application on the Fry Mesa in Utah.

Copies are being sent to the Denver Field office.

Yours very truly,

President

EEJ/wjc
Encls.
cy. of 3 bids.

SILVER DOLLAR
Mining Company

W. 909 SPRAGUE
SPOKANE 4,
WASHINGTON

March 27, 1957

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RECEIVED MAR 29 1957

DATE	INITIALS	CODE
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"	[illegible]	700

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

Atten: Mr. C. O. Mittendorf, Administrator.

Re: Docket No. DMEA-4655 (Uranium)
Joker, et al., Claims
San Juan County, Utah

Dear Mr. Mittendorf:

As suggested by Mr. Harshman, your acting executive officer in Denver, we are enclosing one set of bids on drilling from three separate companies for the information of your office and to be made a part of our original application file.

We will thank you to give this matter your valued consideration.

Yours very truly,

Edward Johnston
President

EEJ/wjc
Encls.
1 cy. 3 bids.

224 New Customhouse
Denver 2, Colorado

March 22, 1957

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DATE	INITIALS	CODE
3/25	C	220
"	Knouse	700

Mr. Elmer E. Johnston, President
Silver Dollar Mining Company
P. O. Box 122
W. 909 Sprague Avenue
Spokane 10, Washington

Re: Docket DMEA-4655 (Uranium)
Silver Dollar Mining Company
(Joker et al., claims)
San Juan County, Utah

Dear Mr. Johnston:

We have received the three copies of drill hole logs which were sent with your letter dated March 18, 1957. To facilitate the processing of your application, we are forwarding two copies of the submitted drill logs to our field examiners. One copy of the drill logs is being temporarily retained in our file.

Regarding your comments to our request for copies of a property location map, you will undoubtedly receive a letter from our Washington Office stating whether or not the explanation given in your letter of March 18 is satisfactory.

From the content of your letter, we will expect to receive at this office the requested bids from each of three drilling companies within the near future.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

MHM:jy
cc: Chm. Op. Comm. (2) w/copy of Applicant's ltr. dtd 3-18-57
King (2)) w/copy of applicant's ltr dtd 3/18/57 & copy
Hasler) of drill hole logs
Harshman
Docket 4655
Chron.

SILVER DOLLAR Mining Company

W. 909 SPRAGUE
SPOKANE 4,
WASHINGTON

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 25 1957

DATE	INITIALS	CODE

March 18, 1957

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

DMEA
DEPARTMENT OF THE INTERIOR
MAR 20 1957
REGION 4
DENVER, COLORADO

Atten: Mr. E. N. Harshman,
Acting Executive Officer.

Dear Mr. Harshman:

In reply to your kind favor of March 13th please be advised that as soon as we received Mr. Mittendorf's letter of March 8th we promptly began to assemble data in connection with bids from three responsible drilling companies, and we will promptly forward these bids to your office as soon as they have become available. In the meantime your office is no doubt more or less familiar with the approximate drilling costs in the area and will undoubtedly proceed with the consideration of the project on the basis of the knowledge and experience of the office staff.

We herewith enclose three copies of the drill hole logs for your files as suggested by Mr. Mittendorf in his letter to us. You will also receive three copies of the drill contractor's bids and one will be forwarded to Washington.

With reference to item 2 in your letter of March 13 please be advised that the map accompanying the application represents all of the claims under consideration in this application for exploration assistance. Part of the ground embraced within the original locations of the North Star Nos. 4, 5 and 6 claims is now covered by the amended locations of the North Star No. 3 and Joker Nos. 3, 4 and 5, as is also the original location of the Joker No. 6. The remainder of the ground was found to be in conflict with senior claim locations owned by outside interests. Therefore the North Star Nos. 4, 5 and 6 and the Joker No. 6 were not amended and we do not represent them now as having any valid claim to mineral land within their original boundaries, and consequently we

do not show them on our property map.

Thank you for giving our application prompt attention, and we will do everything possible at our end to comply with your requests.

Yours very truly,

President

EEJ/wjc

CC: Administrator

Encls: 3 copies 1956 Drill Hole Logs
Fry Mesa Property.

OFFICIAL FILE COPY
DMEA

RECEIVED		1957
DATE		CODE
3/22	C	220
		700

March 15, 1957

Memorandum

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

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4655 (Uranium) Silver Dollar Mining Company (Joker et al claims) San Juan County, Utah

The application for Silver Dollar Mining Company, Docket DMEA 4655, in the amount of $66,687.57 was received in this office on March 15, 1957.

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

W. E. KING

W. E. King

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

DMEA
DEPARTMENT OF THE INTERIOR
MAR 15 1957
REGION III
DENVER, COLORADO

WO (2)

SILVER DOLLAR
Mining Company

W. 909 SPRAGUE
SPOKANE 4,
WASHINGTON

March 18, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 21 1957

DATE	INITIALS	CODE
3/22	C	220
"	[illegible]	700

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

Atten: Mr. C. O. Mittendorf, Administrator.

Re: Docket No. DMEA-4655 (Uranium)
Joker, et al., Claims
San Juan County, Utah.

Dear Mr. Mittendorf:

I thank you for your letter of March 8th which reached me as soon as I returned from the Washington Legislature, and we will be glad to comply with your suggestions therein contained.

I was very pleased to meet your Assistant, Mr. F. L. Knouse, who extended every courtesy to the writer and made helpful suggestions in connection with our application.

We will make every effort to comply with the suggestions of your regional office in assembling necessary supplemental data.

Yours very truly,

Edward J. Johnston
President

EEJ/wjc

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 21 1957
DATE | INITIALS | CODE

March 18, 1957

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

Atten: Mr. E. N. Harshman,
Acting Executive Officer.

Dear Mr. Harshman:

In reply to your kind favor of March 13th please be advised that as soon as we received Mr. Mittendorf's letter of March 8th we promptly began to assemble data in connection with bids from three responsible drilling companies, and we will promptly forward these bids to your office as soon as they have become available. In the meantime your office is no doubt more or less familiar with the approximate drilling costs in the area and will undoubtedly proceed with the consideration of the project on the basis of the knowledge and experience of the office staff.

We herewith enclose three copies of the drill hole logs for your files as suggested by Mr. Mittendorf in his letter to us. You will also receive three copies of the drill contractor's bids and one will be forwarded to Washington.

With reference to item 2 in your letter of March 13 please be advised that the map accompanying the application represents all of the claims under consideration in this application for exploration assistance. Part of the ground embraced within the original locations of the North Star Nos. 4, 5 and 6 claims is now covered by the amended locations of the North Star No. 3 and Joker Nos. 3, 4 and 5, as is also the original location of the Joker No. 6. The remainder of the ground was found to be in conflict with senior claim locations owned by outside interests. Therefore the North Star Nos. 4, 5 and 6 and the Joker No. 6 were not amended and we do not represent them now as having any valid claim to mineral land within their original boundaries, and consequently we

do not show them on our property map.

Thank you for giving our application prompt attention, and we will do everything possible at our end to comply with your requests.

Yours very truly,

President

EEJ/wjc

CC: Administrator

Encls: 3 copies 1956 Drill Hole Logs
Fry Mesa Property.

224 New Customhouse
Denver 2, Colorado

March 13, 1957

3/18 C 220
" 700

Memorandum

To: W. H. King) W/Copy Application and
J. W. Hasler) Related Correspondence

From: DMEA Field Team, Region III

Subject: Docket 4655 (Uranium) Silver Dollar Mining Company (Joker et al., Claims) San Juan County, Utah

Enclosed are a copy of the subject application, Memoranda of Review by John E. Crawford, USBM, and W. F. Williams, USGS, and transmittal thereof dated March 8, 1957, from the Chairman of the Operating Committee, DMEA, and a letter dated March 8, 1957, to the applicant from the Administrator, DMEA. Enclosed also is a copy of our letter dated March 13, 1957, to the applicant making further request to be provided with the information originally sought by the Administrator in the letter dated March 8.

By our letter of March 13, you will note that we have informed the applicant that though its application is being forwarded to the field examiners, we request that no examination be scheduled until you are provided with the necessary information.

When you have received the complete data concerning the application, we request that a field examination be made and a joint report of your findings and recommendations be submitted to this office. The Bureau of Mines' copy of the application should be returned with your report. The Survey's copy of the application is to be returned to Mr. Harshman's office.

If the examination report recommends approval of a contract, please submit 12 extra copies of each map used, which show the land to be subordinated and the location and extent of the proposed work in relation to the property boundaries.

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

Enclosures
MMN:en
cc: Sec. Op. Comm. (2)
Harshman W/C Related Correspondence
King
Docket
Chron.

224 New Customhouse
Denver 2, Colorado

March 13, 1957

3/18 C 220
11 Known 700

Mr. Elmer E. Johnston, President
Silver Dollar Mining Company
P. O. Box 122
W. 909 Sprague Avenue
Spokane 10, Washington

Re: Docket DMEA 4655 (Uranium) Silver Dollar Mining Company (Joker et al, Claims) San Juan County, Utah

Dear Mr. Johnston:

By letter dated March 8, 1957, Mr. C. O. Mittendorf, Administrator, DMEA, requested that you forward one copy of the following to the Washington Office, DMEA, and three copies each of the following to this office:

1. All pertinent drill logs.
2. Map showing the location of all claims proposed for subordination in the application.
3. Bid from each of three drilling companies.

Nonreceipt of the above requested material may delay the scheduling of a field examination.

Very truly yours,

Original signed by
E. N. HARSHMAN

By E. N. Harshman
Acting Executive Officer

MBM:eh
cc: Ch. Op. Comm. (2)
Harshman
King (2)
Nasler
Docket
Chron.

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
3-8	Knouse	700
3-8	Ellis	700
3/8	Selfridge	130
"	Johnson	110
"	Mittendorf	100
		220

MAR - 8 1957

Mr. Elmer E. Johnston, President
Silver Dollar Mining Company
P. O. Box 122
W. 909 Sprague Avenue
Spokane 10, Washington

Re: Docket No. DMEA-4655 (Uranium)
Joker, et al., Claims
San Juan County, Utah

Bishop-Ridgecrest

Dear Mr. Johnston:

The application for assistance in exploring your 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 to:

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

When you delivered the application to this office, Mr. F. L. Knouse requested that you send two copies each of the drill hole logs and bids from three drilling contractors to our Denver Office at the above address, and one copy of the drill hole logs and two copies of the bids from three drilling contractors to this office. If this material has not been forwarded, please send three copies each of the drill hole logs and bids from three drilling contractors to the Denver, Colorado Office and one copy of the bids from the three drilling contractors to this office. Also, the map submitted with your application does not show the locations of the claims North Star Nos. 4, 5, and 6. Therefore, please send three copies of a map to our Denver Office, and one copy to this office which shows the locations of these claims in relation to the other claims.

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

Sincerely yours,

C. O. Mittendorf

Administrator

FLKnouse/izm 3-8-57
cc to: Mr. Knouse
Admr.'s Reading File
DMEA FT Reg. 3 (2)

8623

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
3-8	Knouse	700
3-8	[illegible]	700
3/8	Selfridge	130
"	Johnson	110
"	Whittenberg	100
3/12	C	220
	Bishop	700
	Kiilsgaard	

MAR - 8 1957

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

Re: Docket No. 4655 (Uranium)
Silver Dollar Mining Company
Joker, et al., Claims
San Juan County, Utah

Dear Mr. Harshman:

The captioned application is referred to your office for either a field examination and report on the proposed project or the Field Team's recommendations based on available information.

Enclosed are copies of memoranda, dated March 4 and 5, 1957, from John B. Crawford, USBM, and W. P. Williams, USGS, respectively, relating to the proposed project, and two extra copies of the application with attachments, for the use of the Field Team.

You will note from our letter, of even date, to the Applicant, that we have requested it to forward to your office certain additional information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

O. M. Bishop (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

FLKnouse/izm 3-8-57

cc to: Mr. Knouse
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
JKratchman, AEC

8623

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

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 5 1957

IN REPLY REFER TO:

DATE	INITIALS	CODE
3-5	C	220
3-6	~~Ettes~~	700
Comments Complete		
March 5, 1957		

Memorandum

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

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

Subject: Review of application, DMEA 4655, Silver Dollar Mining Company, Joker, et al claims, Fry Mesa, San Juan County, Utah, (uranium).

The applicant proposes to explore for uranium ore deposits on a large tract of 60 claims in the White Canyon region which contains the Happy Jack mine.

The proposed work would consist of a total of 25,000 feet of core and non-core drilling at a total estimated cost of $66,687.

The proposed drilling project is designed by the applicant to seek for, establish trends for, and explore a series of some nine Shinarump channels. Some of the proposed drilling is on 25 foot centers which may be too close, considering DMEA's aims and purposes.

Previously completed exploration on the property consists of 5,000 feet of rim stripping, and almost 12,000 feet of drilling in 146 holes. The applicant claims some ore holes were drilled but no ore has been mined from the claims.

The property is located in a general area where large ore deposits exist. The applicant states that at least some of the postulated channels outcrop on the property. Under the conditions it appears that the property will best be evaluated in the field. I, accordingly, recommend that the application be referred to the Field Team for report.

W. P. Williams

W. P. Williams

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 4 1957

DATE	INITIALS	CODE
3/5	C	220
3/5	[illegible]	700

[illegible]
[illegible] OF [illegible]
[illegible] OF MINES
[illegible]ington 25, D. C.

Date March 4, 1957

DMEA Docket No. 4655
DMEA Contract No.
Commodity Uranium
Name of applicant Silver Dollar Mining Co.
Name of property Fry Mesa
Location of property San Juan County, Utah
Estimated cost of proj. $66,687.57

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

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

1. [illegible] date rec'd: 2/27/57. 2. Date received by reviewer: 3/1/57

3. [illegible] parts on this property known to reviewer: Yes [ ] No [ ]

4. [illegible] parts on nearby properties known to reviewer: Yes [ ] No [ ]

5. Information available on past production: Yes [ ] No [ ]

6. Other pertinent factors known to reviewer: Yes [ ] No [ ]

7. [illegible] items noted you above:

8. Factors meeting general consideration:
   a. Location [ ]
   b. Ownership [ ]
   c. Evidence of mineralization [ ]
   d. Geology [ ]
   e. Proposed exploration method [ ]
   f. Alternate exploration method [ ]
   g. Costs [ ]
   h. _____ [ ]

9. Action advised:
   a. Obtain information from applicant [ ]
   b. Refer to Field Team [x]
   c. Denial [ ]
   d. Agree with Field Team [ ]
      1. Consult with Mr. _____ at _____ AEC office.
   e. Disagree with Field Team [ ]
   f. Suggest alternate plan [ ]
   g. Request another examination [ ]
   h. Approval [ ]

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

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

February 28, 1957

Silver Dollar Mining Company
W. 909 Sprague Avenue
Spokane 10, Washington

Subject: DMEA-4655
Re: Exploration Assistance

Dear Mr. Johnston:

Your application for exploration assistance, dated February 22, 1957 submitted to our office at Washington, D. C. has been assigned Docket Number DMEA-4655 and referred to the Rare & Miscellaneous Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Chief
Operations Control and
Statistics Division

Copy to: Code 700

3571

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

PROPERTY OF

SILVER DOLLAR MINING COMPANY.

ON FRY MESA, WHITE CANYON MINING DISTRICT

SAN JUAN COUNTY, UTAH.

SCALE: 1" = 400'

Showing Interpreted contours of top of Moenkopi and drill holes proposed under application for D.M.E.A. contract. 2/22/57.

K+E STANDARD 10×10 TO 2½ IN.

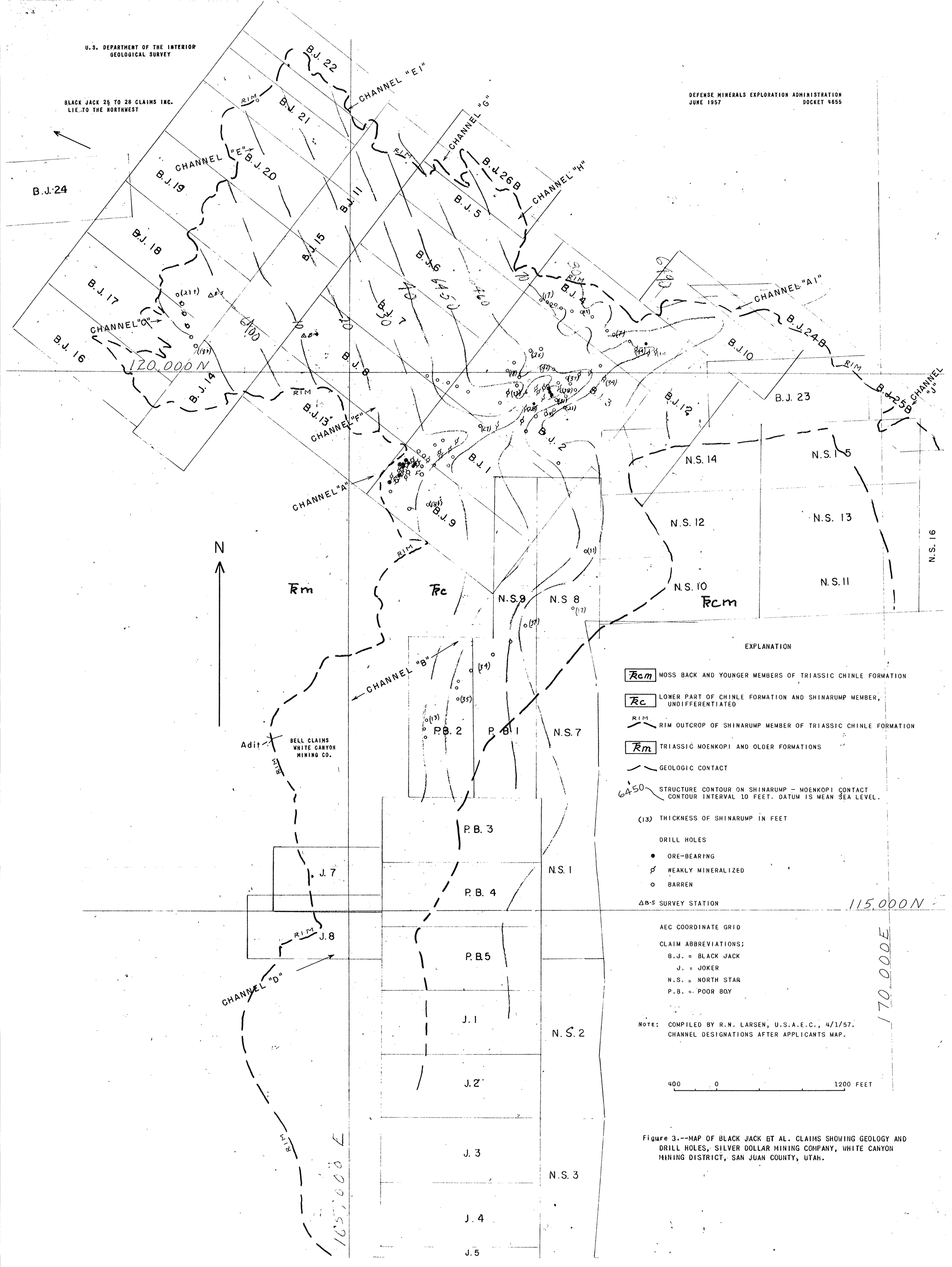

Figure 3.--MAP OF BLACK JACK ET AL. CLAIMS SHOWING GEOLOGY AND DRILL HOLES, SILVER DOLLAR MINING COMPANY, WHITE CANYON MINING DISTRICT, SAN JUAN COUNTY, UTAH.

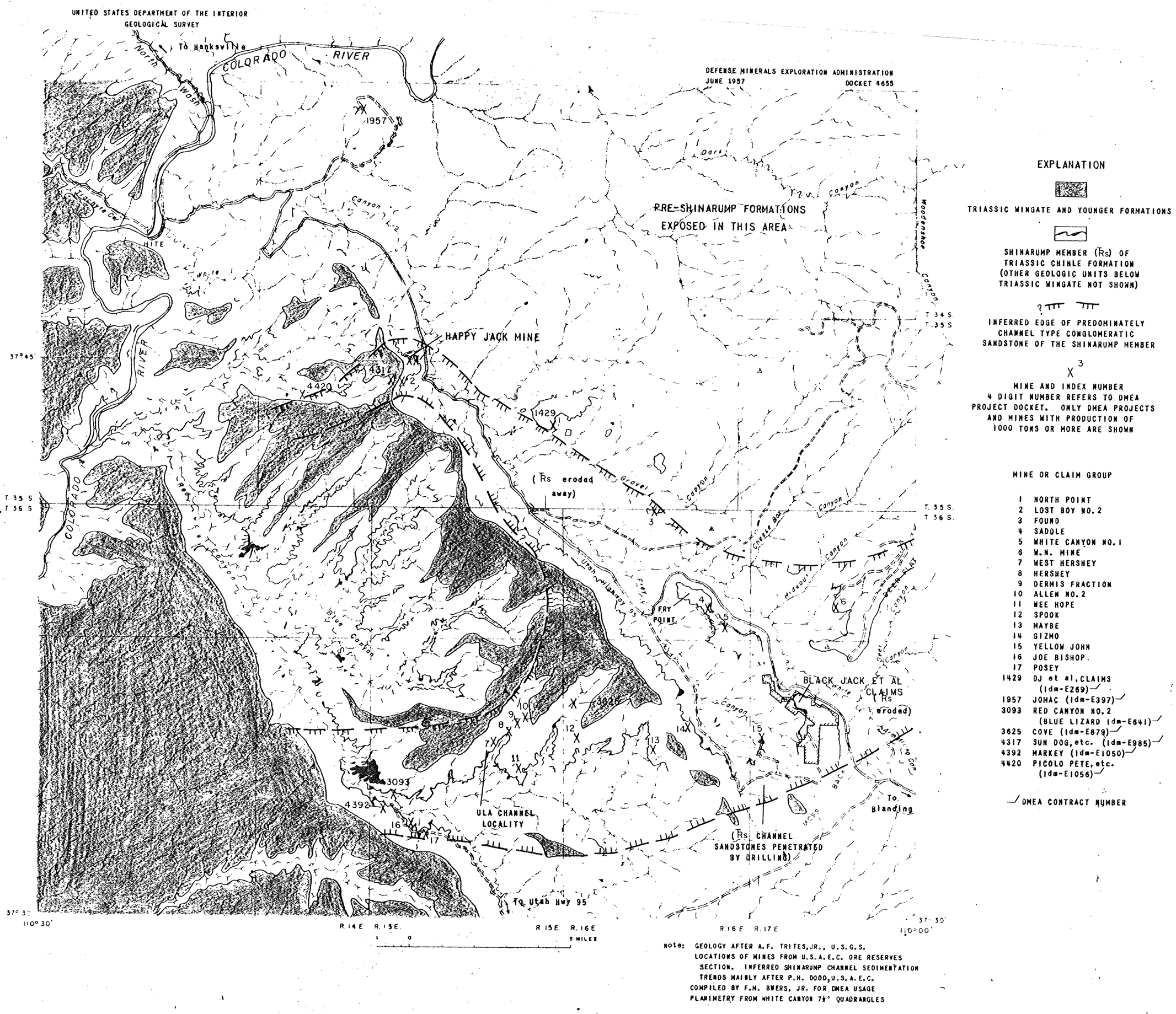

Figure 2.--GENERALIZED GEOLOGIC MAP OF WHITE CANYON AREA, SHOWING LOCATION OF BLACK JACK ET AL. CLAIMS, SILVER DOLLAR MINING COMPANY, SAN JUAN COUNTY, UTAH.