MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

King Edward unpatented mining claim, the original notice of location of which is recorded in Book 15 at page 223 and amended notice of location of which is recorded in Book 41 at page 239 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

4756

Hold until reply to letter written by HEJ 10/11 is rec'd.

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Operator SUNSHINE MINING CO.
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CONSENT TO LIEN
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King Edward unpatented mining claim, the original notice of location of which is recorded in Book 15 at page 223 and amended notice of location of which is recorded in Book 41 at page 239 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

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[Corporate Seal]

MF-205
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EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
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CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

King Edward unpatented mining claim; the original notice of location of which is recorded in Book 15 at page 223 and amended notice of location of which is recorded in Book 41 at page 239 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible] MINING CO.
Docket No. DMEA-[illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

King Edward unpatented mining claim, the original notice of location of which is recorded in Book 15 at page 223 and amended notice of location of which is recorded in Book 41 at page 239 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
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For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA-[illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Kim Edward unnoticated union claim, the original notice of location of which is recorded in Book 15 on page 183 and amended notice of location of which is recorded in Book 41 at page 239 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
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For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA-[illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

[illegible] unpatented mining claim, the original notice of location of which is recorded in Book [illegible] at page [illegible] and amended notice of location of which is recorded in Book [illegible] at page 239 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

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(Combines and supercedes MF-201 and MF-203)
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EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanchie No. 6 unpatented mining claim, the original notice of location of which is recorded in Book 35 at page 504 and the amended notice of location of which is recorded in Book 291 at page 319 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

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[Corporate Seal]

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EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
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Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanchie No. 6 unpatented mining claim, the original notice of location of which is recorded in Book 35 at page 504 and the amended notice of location of which is recorded in Book 291 at page 319 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract;" with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
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EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanchie No. 6 unpatented mining claim, the original notice of location of which is recorded in Book 35 at page 504 and the amended notice of location of which is recorded in Book 291 at page 319 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

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4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA-4736
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanchie No. 6 unpatented mining claim, the original notice of location of which is recorded in Book 35 at page 504 and the amended notice of location of which is recorded in Book 291 at page 319 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA-[illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanche No. 6 unpatented mining claim, the original notice of location of which is recorded in Book 33 at page 504 and the amended notice of location of which is recorded in Book 291 at page 319 in the office of the official recorder of San Juan County, Utah.

, which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA-[illegible]
Contract No. Idm-E_____
Contract Date_____

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Applicants No. 6 unpatented mining claim, the original notice of location of which is recorded in Book 50 on page 300 and the amended notice of location of which is recorded in Book 61 on page 310 in the office of the official recorder of San Juan County, Utah.

_____,
which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

_____

_____

_____

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Buckskin No. 1 unpatented mining claim, notice of location of which is recorded in Book 275 at page 238 in the office of the official recorder of San Juan County, Utah

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Buckskin No. 1 unpatented mining claim, notice of location of which is recorded in Book 275 at page 238 in the office of the official recorder of San Juan County, Utah

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA-4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Duckskin No. 1 unpatented mining claim, notice of location of which is recorded in Book 275 at page 238 in the office of the official recorder of San Juan County, Utah

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Duckskin No. 1 unpatented mining claim, notice of location of which is recorded in Book 273 at page 238 in the office of the official recorder of San Juan County, Utah

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA-[illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of [illegible], State of [illegible], described as follows: 2/

[illegible]

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [redacted]
Docket No. DMEA-[redacted]
Contract No. Idm-E_____
Contract Date_____

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of [redacted], State of [redacted], described as follows: 2/

[redacted]

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Avalanche No. 9 unpatented mining claim, the original notice of location of which is recorded in Book 35, at page 529, and the amended notice of location of which is recorded in Book 291 at page 318 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of SAN JUAN, State of UTAH, described as follows: 2/

Avalanche No. 9 unpatented mining claim, the original notice of location of which is recorded in Book 35, at page 529, and the amended notice of location of which is recorded in Book 291 at page 318 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator ~~SUNSHINE MINING CO.~~
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of ~~SAN JUAN~~, State of ~~UTAH~~, described as follows: 2/

~~Avalanche No. 9 unpatented mining claim, the original notice of~~ location of which is recorded in Book 35, at page 529, and the ~~amended notice of location of which is recorded in Book 291 at page~~ 318 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator ~~SUNSHINE MINING CO.~~
Docket No. DMEA- ~~4756~~
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of ~~SAN JUAN~~, State of ~~UTAH~~, described as follows: 2/

~~Avalanche No. 9 unpatented mining claim, the original notice of location of which is recorded in Book 35, at page 529, and the amended notice of location of which is recorded in Book 231 at page 318 in the office of the official recorder of San Juan County, Utah.~~

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator ~~CONTINE MINING CO.~~
Docket No. DMEA- ~~4736~~
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of ~~SAN JUAN~~, State of ~~UTAH~~, described as follows: 2/

~~Avalanche No. 3 unpatented mining claim, the original notice of location of which is recorded in Book 33, at page 329, and the amended notice of location of which is recorded in Book 291 at page 318 in the office of the official recorder of San Juan County, Utah.~~

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA- [illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of [illegible], State of [illegible], described as follows: 2/

[illegible] lieu of [illegible] claim, the original notice of location of which is recorded in Book [illegible], at page [illegible], and the amended notice of location of which is recorded in Book [illegible] at page [illegible] in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA-4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanche No. 3 unpatented mining claim, the original notice of location of which is recorded in Book 33 at page 240 and the amended notice of location of which is recorded in Book 291 at page 323 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA-4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanche No. 3 unpatented mining claim, the original notice of location of which is recorded in Book 33 at page 240 and the amended notice of location of which is recorded in Book 291 at page 323 in the office of the official recorder of San Juan County, Utah.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator SUNSHINE MINING CO.
Docket No. DMEA-4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Avalanche No. 3 unpatented mining claim, the original notice of location of which is recorded in Book 33 at page 240 and the amended notice of location of which is recorded in Book 291 at page 323 in the office of the official recorder of San Juan County, Utah.

_____,
which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

_____

_____

_____

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator ~~SUNSHINE MINING CO.~~
Docket No. DMEA-~~4756~~
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of ~~San Juan~~, State of ~~Utah~~, described as follows: 2/

~~Avalanche No. 3 unpatented mining claim, the original notice of location of which is recorded in Book 33 at page 240 and the amended notice of location of which is recorded in Book 291 at page 323 in the office of the official recorder of San Juan County, Utah.~~

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1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

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Dated this _____ day of _____, 195__.

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator ~~[illegible]~~
Docket No. DMEA- ~~[illegible]~~
Contract No. Idm-E
Contract Date

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and
SUBORDINATION AGREEMENT 1/

To the United States of America:

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [illegible]
Docket No. DMEA-[illegible]
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

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[Corporate Seal]

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

OFFICIAL BUSINESS

Mr. E. E. Eddy, Manager
Sunshine Mining Company
738 Peyton Building
Spokane 1, Washington

DMEA Form 9
(Rev. 5/57)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E No.____

DMEA NO. 4756

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

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

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

Folder No. 1:

Left Side

Royalty Audits 1/
Certification of Discovery
Cost Audits 2/
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments
Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
✓ Application and attachments
✓ Envelope for maps

Right Side

Project summary
Work completed analysis
All other material filed in chronological order including the following reports if checked:

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

Additional Folders:

Left Side

Folder No.____:
Analysis of Semi-Annual Inspection Reports
Interim Summary Reports by DMEA Engineers

Right Side

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

Folder No.____: Maps (Use pocket folder or envelope.)

Folder No.____: Settlement Sheets

Folder No.____: Drill Logs

Folder No.____: Royalty material

1/ Or reports of royalty review
2/ Or cost reports of review

16592

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 7 1957

DATE	INITIALS	CODE

June 4, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) ~~Sunshine Mining~~ Corporation (King Edward Claim) San Juan County, Utah

Enclosed are the original and one copy of the subject application. One copy of the application is being forwarded to the Grand Junction Office, DMEA. One copy of the application is being retained in our file.

The Applicant proposes to explore a purported mineralized target area by 9200 feet of core and non-core drilling at a total estimated cost of $16,176.00.

Cursory inspection of the application indicates the Applicant did not base the drilling estimates on the lowest bid submitted.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Sunshine Mining Company
738 PEYTON BUILDING - RIVERSIDE 7-1035
SPOKANE 1, WASHINGTON

DMEA
DEPARTMENT OF THE INTERIOR
JUN 3 - 1957
REGION III
DENVER, COLORADO

Box 474
Blanding Utah
May 30, 1957

Defense Minerals Exploration Administration
224 New Customhouse
Denver, 2.
Colorado

Gentlemen;

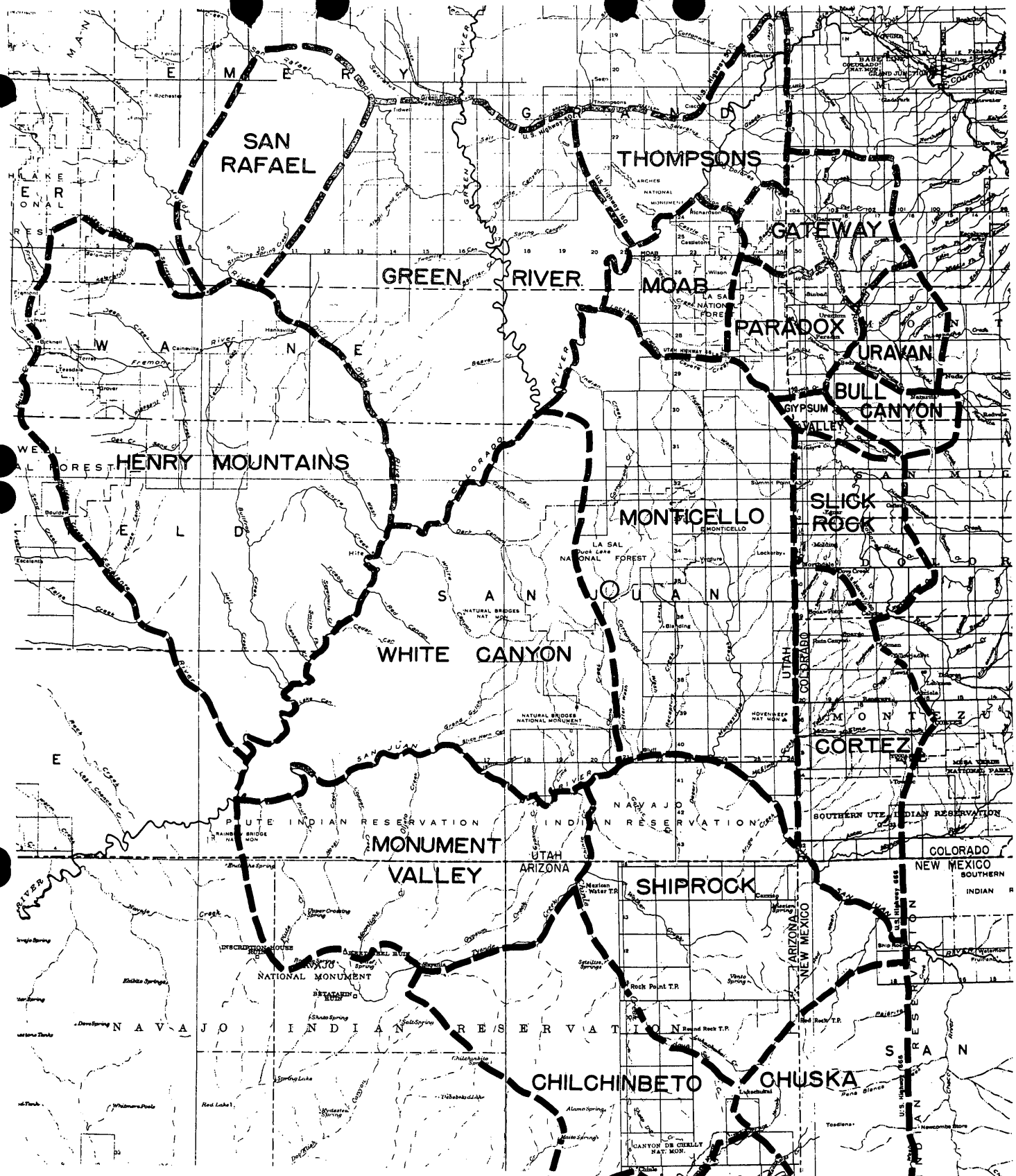
There is submitted herewith our application for a D.M.E.A. loan at our uranium mine in Upper Cottonwood Wash, west of Blanding Utah, which we trust you will find properly prepared for your consideration.

Communications with respect to this application may be addressed to the writer at the above Blanding address.

Sincerely yours,

SUNSHINE MINING COMPANY
BY E. E. Eddy
Manager.

OFFICIAL FILE COPY
D M E A
RECEIVED JUN 7 1957
DATE | INITIALS | CODE



USAEC Map Showing

URANIUM MINING DISTRICTS

OF WESTERN COLORADO, EASTERN UTAH,

NORTHEASTERN ARIZONA, AND NORTHWESTERN NEW MEXICO

Showing Property Location

Sunshine Mining Company

Box 474 Blanding Utah

DUNKIN BLUE PRINT & Supply Co.
Grand Junction, Colorado

MF-103
(Revised April 1952)

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

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

JUN 3 - 1957
REGION III
DENVER, COLORADO

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. 4756
Metal or Mineral URANIUM
Date Received 6-7-57
Estimated Cost $16,176
Participation (Government %)

RECEIVED JUN 7 1957 D.M.E.A.

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: (a) Sunshine Mining Company, Box 474, Blanding Utah.
(b) A Washington Corporation.
(c) See Page 3 appended.
(d) Not applicable.

(*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 King Edward unpatented lode mining claim, located in section 34, TWP-34S, R-20E, S.L.M. (unsurveyed).

(*b*) State any mine name by which the property is known. Ransom Mine.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Sunshine Mining Company owns an undivided one half interest in the property.

(*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. See page 3 appended.

(*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. Book 15 of mining locations at page 223 in the office of San Juan County Recorder at Monticello, Utah.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See page 3 appended,

(*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. See page 6 appended.

(*c*) The work will start within 20 days and be completed within 2½ months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See page 6 appended.

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated May 25, 1957

Sunshine Mining Company
(Applicant)

By E. E. Eddy, mgr.

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

1. (c) Corporation Officers.

President- R. M. Hardy Jr.	738 Peyton Bldg.		Spokane Wash.
Secretary- C. M. Hull			Yakima Wash.
Asst. Secretary- Stanton Bennett	"	"	Spokane Wash.
Mgr. Mining Division- John Edgar	"	"	" "
Mgr. Petroleum Div.- Al Wynn	"	"	" "

3. (d) In addition to the undivided ½ interest in this property, the following corporations own an undivided 1/6 interest with Sunshine Mining Company.

1. Clayton Silver Mines Inc. Wallace Idaho.
2. Silver Syndicate Wallace Idaho.
3. Sunshine Consolidated Mining Co. Wallace Idaho.

Letters from the above companies confirming this statement are being prepared, and will be forwarded as soon as available.

4. (a) Past mining operations have consisted of 2175 lineal feet of 10 x 10 drifts and crosscuts, and 1926 feet of rotary drilling. This work is plotted on accompanying maps. Sunshine Mining Company has been responsible for 335 feet of the drifts and all of the drilling.

Production facilities consist of deisel powered compressors and loaders, rock drills and miscellaneous items required for mining operations. The mine workings are readily accessible for inspection.

(b) Past production has amounted to 8500 short tons (dry) averaging 0.27% U_3O_8 in grade. Oer thickness is 5.0 feet and the computed ore reserve amounts to 3350 tons at 0.40% grade. The above described work has completely outlined and delimited the only known orebody on the claim. The ore reserves lie entirely on the east side of coordinate line 49200-E as shown on the accompanying plan map of the area.

(c) The mineralization so far encountered in the King Edward claim occurs in the Shinarump conglomerate at its contact with the underlying Moenkopi shale. In this imediate area there is a noticeable thickening of the Shinarump member as indicated by sections B-B and C-C on the attached drawings. The King Edward orebody lies on the northerly flank of this thickened area.

It is generally accepted that uranium mineralization in this environment is confined to erosion channels into the Moenkopi formation which has become filled with the Shinarump conglomerate. The regional trend of these channels is North-east and South-west and the channels are characteristically narrow and somewhat meandering, which results in an elongated orebody emplaced in or near a thickened zone of the host

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Shinarump formation.

The King Edward orebody displays few of these characteristic features. Its general outlines, as indicated by the accompanying maps, show it to be irregularly oval in shape rather than narrow and elongated in conformity with the regional channel trends. It does, however, exist in an area of thickened Shinarump, and this thickening is mapped in its outcrop area on the King Edward claim and also in its presumed extension South-westerly where the formation outcrops on the opposite side of the mesa. (Section C-C)

The deviation from the typical channel type of occurrence in this area may possibly be explained by noting the influence of post mineral (?) folding in the vicinity. This folding is assosciated with the Elk Ridge uplift to the west and just out of the map area. Here the bedas are raised some 2500 feet vertically above Cottonwood Wash. As a result, dips of 20 to 30 degrees are observed and mapped on the South-westerly rim of King Edward Mesa and these dips are rapidly reduced in the map area to the normal 5 to 8 degree dips shown on the easterly mesa rim at the King Edward portal. It is suggested that this post mineral (?) movement may have created conditions favorable to the removal of channel emplaced mineralization, and the re-deposition of the same mineral in newly created traps at lower elevations, down dip within the same permeable medium and by typical solution and re-precipitation processes known to affect uranium ore deposits.

Alternatively, if the mineralization is hydrothermal in origin, and the folding is pre-mineral, ore deposition in the same structural traps could occur, as in the case of the presumed syngenitic ore occurrence.

Either of these conditions could account for the location and shape of the King Edward ore section in an area which is essentially flat and without the usual evidence of channel control.

It also suggests the possibility of other similarly shaped and structurally controlled ore bodies to be found up dip and within the area of thickened Shinarump which exists in that direction.

It is the recognition of this possibility which encourages the request for exploration funds incorporated in this application.

Sunshine Mining Company feels that as exploration for unexposed uranium orebodies progresses toward deeper horizons and further away from outcrop areas, the expense of drilling rows of fence holes along favorable trends becomes statistically and economically prohibitive as an exploration technique. In this connection we have given serious consideration to the search for geo-physical tools which could be used to eliminate unfavorable areas or to point to favorable areas for exploration, in the hope that such data could be used to provide additional logical reasons for the exploration or abandonment of a given area.

In this instance we have explored the King Edward area and two other nearby areas in the same claim group with a procedure which is based on the measurement of very small amounts of alpha radiation resulting from the presence of radon gas in areas affected by the radioactive decay of uranium and its daughter products. For identification this procedure is referred to as the "Radon Survey".

The procedure is sponsored by Kiva Explorations Inc. of Austin Texas, which firm is an assosciation of scientifically trained geo-physicists who have developed and experimented with the equipment and procedure used in this case.

For background information relative to the theory and application of the procedure, there is attached to this application as Appendix A, a report submitted to Sunshine Mining Company under date of November 20, 1956 and under the letterhead of "Radio Geophysical Co.", the predecessor of Kiva Explorations Inc.

Appendix "B" is a copy of the final report submitted by Kiva Explorations Inc., covering work done in the three areas referred to above. It will be noted that the work done on the King Edward claim resulted in the mapping of an anomaly some 250 feet west of any other work which has been done on the claim.

It is also to be noted that this anomaly is in general in the area to be explored by the three rows of fence holes proposed as the stage one phase of this application. The presence of this anomaly is not responsible for the locations assigned to the proposed drill holes. The hole locations were chosen in conformity with accepted practice in the uranium field, and the later development of the anomaly in the same area was coincidental.

The results of the radon survey are only mentioned here as being possibly additional justification

for the location of the stage one drill holes. There is the further hope that the successful completion of the requested exploration program will develop data which will confirm the value of the "Radon Survey" as an exploration tool of value in this area.

(d) The exploration site is readily accessbile from the camp established at the upper fork of Cottonwood Wash. Blanding, Utah is twenty seven miles to the east over second class mountain roads and is the nearest supply point.

(e) Manpower, materials, supplies and equipment are readily available in Blanding. Water has been developed from springs at the campsite adequate for culinary purposes. Drill water is available in Cottonwood Wash and in the mine workings.

5. (b) The proposed work lies entirely within the borders of the King Edward claim and west of the coordinate line 49200-E as shown on the plan map of the area.

Stage 1. Fifteen drill holes, each consisting of approximately 200 feet of rotary plug drilling to the contact of the lower Chinle and the Shinarump formations, followed by approximately 30 feet of NX core drilling thru the Shinarump to its contact with the Underlying Moenkopi formation. The drill holes will be located in rows 200 feet apart and on 100 foot centers across the claim. The first row of holes will be located about 200 feet westerly from any existing drill holes or mine workings.

Stage 2. A maximum of twenty eight drill holes to offset on not less than 50 foot centers. any mineralization or favorable structures encountered in the Stage 1. drilling. It is proposed that the exact number and location of Stage 2. holes be determined on the completion of the Stage 1. drilling, by members of the D.M.E.A. field team and representatives of the applicant. It is also proposed that one fourth of the Stage 2. drilling be devoted to a combination of plugging and core drilling as in stage 1. The remainder of the drilling in this case will be exclusively plug drilling in the interest of economy.

(d) Sunshine Mining Company has a record of successful operation in the base metal field going back twenty-five years. Its principal mining operation is a 750 ton per day operation in the couer d' Alene Mining district in northern Idaho. This project will be directed and conducted by regular staff members of the applicant assigned to the project.

6. Estimate of Costs.

(a) Independent Contracts. See contractors bids submitted herewith as Exhibit 1. and attached to the original copy of this application.

Stage 1.	2400 ft. Rotary Drilling @ 1.35/ft.	$3240.00
	360 ft. NX Core Drilling @ 3.75/ft.	1450.00
	2760 ft. Radiometric logging @ .05/ft.	138.00
	15 Core Boxes @ 5.00 ea.	75.00
	Total Stage 1.	$4903.00
Stage 2.	6230 ft. Rotary Drilling @ 1.30/ft.	$8099.00
	210 ft. NX Core Drilling @ 4.75/ft.	787.50
	6440 ft. Radiometric Logging @ .05/ft.	322.00
	9 Core Boxes @ 5.00 ea.	45.00
	Total Stage 2.	$9243.50
	Total Stage 1 and Stage 2.	$14146.50

(b) Engineering Supervision.

Stage 1. 1½ months @ 550.00/month	$825.00
Stage 2. 1 month @ 550.00/ month	550.00
Total Stage 1. and Stage 2.	$1375.00

(c) Operating Materials & Supplies. None required.

(d) Operating Equipment. The applicant owns a Caterpillar D-6 Tractor which will be assigned to the project to build nescessary drill roads and drill sites on a rental basis.

Stage 1.	40 Hours tractor rental @ 6.50/hr.	$260.00
Stage 2.	10 Hours tractor rental @ 6.50/hr.	65.00
	Total Stage 1. and Stage 2.	$325.00

(e) Rehabilitation & Repairs. None required.

(f) New Buildings etc. None required.

(g) Miscellaneous.

Stage 1.	12- U_3O_8 Determinations @ 5.00 ea.	$60.00
	Workmens Compensation $825.00 @ 2.7%	22.27
	Liability Insurance $825,00 @ 4.47%	36.88
	Payroll Taxes $825,00 @ 2.25%	18.57
	Total Stage 1.	$137.71

Stage 2.	28- U_3O_8 Determinations @ 5.00 ea.	$140.00
	Workmens Compensation	
	$550.00 @ 2.7%	14.85
	Liability Insurance	
	$550.00 @ 4.47%	24.58
	Payroll Taxes	
	$550.00 @ 2.25%	12.37
	Total Stage 2.	$191.80
	Total Stage 1 & Stage 2.	$329.51

(h) Contingencies. None.

Total Cost. Stage 1.	$6125.71
Total Cost. Stage 2.	$10050.30
Total Cost Stage 1 and Stage 2.	$16,176.01

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Sunshine Consolidated, Inc.

102 Sidney Building, Kellogg, Idaho

May 28, 1957

SUNSHINE MINING CO.
BOX ~~XXX~~ 474
Blanding Utah

TO WHOM IT MAY CONCERN:

Sunshine Consolidated, Inc. of Kellogg, Idaho is the owner of one-sixth (1/6) interest in and to King Edward and King James lode mining claims located in Upper Cottonwood Wash, San Juan County, Utah as shown in the files of the County Recorder in Monticello, Utah.

This is to advise that Sunshine Consolidated, Inc. has designated Sunshine Mining Company as Operator of said claims, and that said Sunshine Mining Company shall act as agent for Sunshine Consolidated, Inc. in matters affecting the operations of the above named lode mining claims.

SUNSHINE CONSOLIDATED, INC.

By Fred E. Marler, Jr.
Secretary

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CLAYTON SILVER MINES

MINES AT CLAYTON, IDAHO

WALLACE IDAHO

May 28, 1957

SUNSHINE MINING CO.
BOX ~~XXX~~ 474
Blanding Utah

TO WHOM IT MAY CONCERN:

Clayton Silver Mines of Wallace, Idaho is the owner of one-sixth (1/6) interest in and to King Edward and King James lode mining claims located in Upper Cottonwood Wash, San Juan County, Utah as shown in the files of the County Recorder in Monticello, Utah.

This is to advise that Clayton Silver Mines has designated Sunshine Mining Company as Operator of said claims, and that said Sunshine Mining Company shall act as agent for Clayton Silver Mines in matters affecting the operations of the above named lode mining claims.

CLAYTON SILVER MINES

By Ray Marrison
Secretary

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W. M. YEAMAN, PRESIDENT
YAKIMA, WASHINGTON

NORMAN M. SMITH
DIRECTING ENGINEER

SILVER SYNDICATE, INC.

ENGINEERING OFFICE
SUNSHINE STAR ROUTE
KELLOGG, IDAHO

May 28, 1957

SUNSHINE MINING CO.
BOX ~~XXX~~ 474
Blanding Utah

TO WHOM IT MAY CONCERN:

Silver Syndicate, Inc. of Wallace, Idaho is the owner of one-sixth (1/6) interest in and to King Edward and King James lode mining claims located in Upper Cottonwood Wash, San Juan County, Utah as shown in the files of the County Recorder in Monticello, Utah.

This is to advise that Silver Syndicate, Inc. has designated Sunshine Mining Company as Operator of said claims, and that said Sunshine Mining Company shall act as agent for Silver Syndicate, Inc. in matters affecting the operations of the above named lode mining claims.

SILVER SYNDICATE, INC.

By Ray Marcus
Secretary

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Exhibit No. 1 Sunshine Mining Company Standing Utah

BID ON DRILLING OF
KING EDWARD CLAIM EXPLORATION PROJECT

STAGE 1:

Minimum of 3000' of Rotary Plug Drilling.
Rate: $1.35 per Foot not to exceed 400 feet in depth. (See Note A)
2 7/16" Core Size @ $3.75 per foot not to exceed 400 feet in depth.

STAGE 2:

Minimum of 6690' of Rotary Plug Drilling.
Rate: $1.35 per foot not to exceed 400 feet in depth. (See Note A)
2/ 7/16" Core Size @ $3.75 per foot not to exceed 400 feet in depth.

NOTE A:
In the event that Stage 2 shall immediately follow Stage 1, then the rate for Rotary Plug Drilling in Stage 2 shall be reduced to $1.30 per foot with Core Drilling to be at $3.75 per foot.

STIPULATIONS:

A. Contractor will haul water at his expense from available springs.
B. Where necessary, contractor will set casing in all holes before coring and will recover same at his own expense.
C. Contractor will furnish (1) Copy of drill operators hole log at his expense, and (2) a radiometric log of the completed hole recorded on suitable graph paper at an additional cost of 5¢ per foot.
D. Core boxes as agreed upon shall be furnished at $5.00 per box. = 7.5 ft
E. Time limit for completion of Stage 1 is one month.
F. Time limit for completion of Stage 2 is one month.
G. Footage for Stage 2 is a maximum and is contingent upon results of Stage 1 drilling. No footage is guaranteed for Stage 2.

This Bid prepared and submitted to Sunshine Mining Company by Corinne Drilling Company May 6, 1957.

CORRINE DRILLING COMPANY

Leo C. Malay
Witness:

L. R. French
L.R. FRENCH Owner

Exhibit No. 1 Sunshine Mining Company Blanding Utah.

Del-Wan Drilling Company

2606 — PHONES — 2203
BOX 222
Blanding, Utah

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DATE	INITIALS	CODE

April 29, 1957

Mr. Eddy
Sunshine Mining Company
Box 474
Blanding, Utah

Dear Sir:

I would like to submit my bid on your proposed Drilling Project known as the "King Edward Claim Exploration Project".

Your proposed Drilling Project is:

STAGE 1.

12 Drill holes averaging 230 ft. in depth of which:

2400 ft. will be Rotary Plug Drilling.
360 ft. will be NX Core Drilling.

STAGE 2.

28 holes averaging 230 ft. in depth of which:

6230 ft. will be Rotary Plug Drilling.
210 ft. will be NX Core Drilling.

STIPULATIONS.

A. Contractor will haul water at his expense from available springs.
B. Contractor will set casing in all holes before coring and recover same at his expense.
C. Contractor will furnish (1) Copy of drill operators hole log and (2) a radiometric log of the completed hole recorded on suitable graph paper.
D. Supply core boxes as agreed upon.
E. Time limit for completion of Stage 1 is one month.
F. Time limit for completion of Stage 2 is one Month.
G. Footage for Stage 2 is a maximum and is contingent upon results of Stage 1 Drilling. No footage is guaranteed for Stage 2.

Exhibit No. 1. Sunshine Mining Company Blanding Utah

Del-Wan Drilling Company

2606 — PHONES — 2203
BOX 222
Blanding, Utah

My bid for the aforesaid Drilling is:

Stage 1.

Rotary Plug Drilling ---------- $1.95 per ft.
NX Core Drilling ---------- $3.00 per ft.

Stage 2.

Rotary Plug Drilling ---------- $1.75 per ft.
NX Core Drilling ---------- $3.00 per ft.

Since the time that this Project will began is not cer
not certain, I would like to have ten days notice of the starting date.

I thank you for your invitation to bid on this Project and I feel sure that if we are awarded the Contract that we will be able to complete it to your satisfaction and specifications.

Sincerely Yours,
James D. Terrell
James D. Terrell, Partner
Del-Wan Drilling Co.

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Exhibit No. 1. Sunshine Mining Company Blanding Utah

Vivian Drilling Co.

ROCK BIT & DIAMOND CORE DRILLING CONTRACTORS

P. O. BOX 1025
MOAB, UTAH

PHONE: ALPINE 3-4366

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May 2, 1957

To: Sunshine Mining Co.
Blanding, Utah

KING EDWARD CLAIM EXPLORATION PROJECT

STAGE 1.

12 Drill holes averaging 230 ft. in depth of which:

2400 ft. will be Rotary Plug Drilling	$2.35 per ft.
360 ft. Will be NX Core Drilling	$5.85 per ft.

STAGE 2.

28 Holes averaging 230 ft. in depth of which:

6230 ft. will be Rotary Plug Drilling	$2.25 per ft.
210 ft. will be NX Core Drilling	$5.75 per ft.

STIPULATIONS.

A. Contractor will haul water at his expense from available springs.
B. Contractor will set casing in all holes before coring and recover same at his expense.
C. Contractor will furnish (1) Copy of drill operators hole log and (2) a radiometric log of the completed hole recorded on suitable graph paper.
D. Supply core boses as agreed upon.
E. Time limit for completion of stage 1 is one month.
F. Time limit for completion of stage 2 is one month.
G. Footage for stage 2 is a maximum and is contingent upon results fo stage 1 drilling. No footage is guaranteed for stage 2.
H. Drill sites and truck roads to drill sites to be furnished by the Mining Co.

C. B. Vivian

C. B. Vivian

CB/em

RADIO GEOPHYSICAL COMPANY

GEOPHYSICS - MINING - RESEARCH
TRANSIT TOWER
SAN ANTONIO, TEXAS

LABORATORIES
5209 N. LAMAR BLVD.
AUSTIN, TEXAS

MINING
R G C BUILDING
BLANDING, UTAH

November 20, 1956

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DATE	INITIALS	CODE

Confidential

Mr. E. E. Eddie
Sunshine Mining Company
Blanding, Utah

Dear Mr. Eddie:

Thank you for the opportunity to visit with you recently to discuss our exploration technique for uranium. In response to your request, I discuss below the technique as I described it to you and the results of our incomplete survey over your Avalanche prospect.

RGC is interested in and does research on techniques and instrumentation for new geophysical methods as applied to the search for oil, uranium and other hard minerals. Until early 1954 our interests were confined to petroleum exploration. At about that time, due to the considerable interest shown by our clients in uranium, we entered the field of uranium exploration.

Early in 1955, RGC was approached by a mining company with a proposal that the two companies should jointly evaluate the possibilities of a particular method for uranium exploration. Briefly, it was proposed that in uranium mineralized areas there might be present near the surface minute but detectable quantities of Radon in the soil gases since Radon is a product of the radioactive decay of uranium. Technicians in the uranium industry have generally believed that Radon generated by uranium ore bodies which are buried at considerable depth would not appear in detectable amounts near the surface. This opinion was based on the consideration of Radon's high density, slow rate of diffusion, and relatively short half-life. While this position appeared reasonable to us we could find in the literature on the subject several references wherein the claim was made that successful explorations for radioactive materials had been performed by the measurement of Radon distribution in the surrounding country rock. A study of the problem indicated that if the soil gas from the material overlying ore bodies could be sampled without contamination and provided that a Radon concentration in the part per billion range or more was present, then the distribution

of a group of such Radon concentration data might point the way to buried uranium ore. The joint investigation of this method was undertaken and work has continued to the present date.

In the course of the investigation, RGC has perfected the instrumentation and technique necessary for soil gas sampling without contamination and for the accurate analysis of such samples for Radon in extremely small quantities. A change of Radon concentration in the sample of approximately 4×10^{-10} parts per billion will double the background count of the instrument, which experience has shown is a sensitivity at least ten times that required for successful Radon exploration. A concentration of one millionth of a part per billion of Radon in air will produce an instrument count of approximately 500 cpm. The exploration method devised has been demonstrated to be valid for the delineation of mineralized areas even though the mineralization may lie at depths exceeding 100 feet.

It is difficult to conclude that Radon emanation from an ore body buried at, say, 300 feet is detectable at the surface. We do not know whether the anomalous Radon concentrations detected in the deeper explorations result from a direct evolution from the ore body or whether the anomaly results from uranium minerals which have permeated the rock overlying the ore body and thus produce the Radon from locations nearer the surface. Our work, however, shows a high correlation between statistically valid Radon anomalies and the presence of mineralization in subsurface. If an ore body is buried at 100 feet or less it is possible to conclude theoretically that a sufficient quantity of Radon will reach the surface as to be readily detectable by this method. As the depth to the theoretical ore body is increased, such a conclusion becomes more hazardous. No doubt many factors influence the ease of detectability of ore buried at the relatively greater depths. In the Elk Ridge area, however, we have repeatedly demonstrated that Radon anomalies are detectable over ore bodies buried from 250-300 feet.

The Radon analysis technique which we employ is a superior method for determining the lateral distribution of mineralization in the subsurface. The method is more suited than the conventional gamma-ray detection apparatus for accomplishing this purpose for the following reasons:

1. A gamma-ray detection device, such as a scintillator necessarily, if its sensitivity is sufficiently high to detect small changes in radioactivity, has a high background count which is caused by cosmic incidents, man-made clouds of radioactive material, and any radioactive material existing in the

earth materials which are exposed to the scintillating device through the air up to distances of several thousand feet. Since gamma rays are highly attenuated in earth materials, and since air is comparatively transparent to gamma rays, a scintillating device placed in the air-earth interface will be more greatly influenced by the above-enumerated background sources than it will by possible gamma ray sources which may lie even in the first few feet beneath the surface on which it is placed. For this reason, even large changes in mineralization which underlie the earth's surface may appear, if at all detectable, as but minor variations of count when superimposed upon the high ambient background, or noise level, of the gamma detection device. The technique of investigation employed by the Radon method involves instrumentation which is unaffected by the aforementioned high background sources. This favorable condition permits the Radon instrument to easily detect the relatively small changes in the radioactivity near the surface which may indicate the presence of commercial mineralization at depth.

By way of illustration, we have repeatedly demonstrated that where the gamma background is, for example, an average 1500 counts per minute for a particular scintillator when we traversed over an ore body buried more than ten feet beneath the earth's surface, we have been unable to discern a change of count greater than the probable error in the determination of the average background count of the instrument. The Radon instrument, with air in the counting chamber, has a background count of approximately 30 counts per minute. Ordinarily, a sufficient quantity of Radon is present in gas samples removed from country rock to produce a count in this instrument of from 400 to 700 counts per minute. Soil gas samples removed from the area over or near the ore body may result in counts of from 1000 to 3000 counts per minute or more. An ore body of commercial grade which is buried from 20 to 60 feet may result in counts as high as 5000 to 10,000 per minute. Thus, the contrast in counts per minute over the background is ordinarily expected to exceed by two, three, or more times the background of the count of a non-anomalous gas sample and by several orders of magnitude the background count of the instrument itself.

2. In radioactive surveying with gamma detection devices, changes in surface soil composition, the amount of water in the soil near the surface, etc., produce such irregularities in the data from point to point as to obscure variations in counting rate which may be caused by a subsurface change in mineralization. This surface effect is further complicated, at least in part, by the fact that the instrument "sees" the net effect from

surface materials and conditions anywhere within thousands of feet of the point of observation. Since the scintillator count is primarily the result of these surface influences, the device necessarily is a blunt instrument for the delineation of local "hot" areas. In the Radon technique a sample of the soil gas from a sphere of influence around the sampling point from about two feet in radius is removed for the determination. The sampling point is ordinarily from six to eight feet subsurface. Surface conditions at or near the sampling point do not, therefore, affect the results obtained. For this reason, Radon surveyswill give much more precise indication of the subsurface mineralization distribution than will a scintillator survey accomplished at the surface or in the air.

3. It has been observed by several investigators that the clarity of a gamma-radioactivity anomaly, that is, the increase of activity in the anomaly as contrasted to the normal background, is influenced by moisture conditions at the surface and by barometric changes of the atmosphere. Such a direct relationship has indicated to these observers that a gamma-ray anomaly, provided the ore is completely buried, depends basically upon the evolution of Radon from the underlying mineralization; a decomposition of this Radon at or near the surface to the gamma-producing Radium C, and the detection by the gamma device of the immediate surface distribution of Radium C. Research on Radon evolution from exposed mineral faces in mines and drill holes shows that a gross change of barometric pressure does directly affect the rate of Radon evolution and thus would influence the concentration of the surface of the highly active Radium C. Radium C sources would be washed away by a heavy rain and, since Radon itself is quite soluble in water, the Radon near the surface may also be dissolved and carried away by surface waters all to the detriment of the sought-for anomaly. RGC's technique of sampling soil gases beneath the surface where weather effects are minimized largely obviates the influence of weather on radioactivity anomalies.

4. In the application of the scintillator to the exploration for uranium no method known to the writer has been devised for statistically evaluating the quality of data of ore anomalies therein observed. An important feature of RGC's Radon technique is that the data are amenable to such an evaluation. An individual analysis for Radon is reproducible with a probable error of approximately plus or minus 6%. In the course of a survey over an area which is not anomalously mineralized the variation in the activities of a group of samples from the area may exceed by several

times the probable error of any one determination. The instrument, therefore, is more than competent for the determination to be made.

The aforementioned variations which may be observed in the activities of a large group of samples from a non-mineralized area may vary over a range of 100 to 1000 counts per minute. However, a major portion of these observations will fall near the mean or average count for the total group. A plot of the frequencies (or the number of times a particular background value appears in a large group) versus the background values demonstrates that the background values vary in a random fashion. Such a frequency plot of a large group of samples produce a distribution to which may be fitted a statistical "normal distribution curve". An acceptable fit of the theoretical curve to the observed data demonstrates that the data may be evaluated by statistical methods. For example, the data collected in the Payday area, San Juan County, Utah, yielded as an average background count 620 counts per minute. You will observe, however, that the background values vary roughly from 200-1000 counts per minute. The calculated statistical normal distribution curve for these data is plotted and you will observe the quite satisfactory fit of the theoretical curve to the distribution of the observations.

One is able, therefore, to measure by statistical methods the expected probable deviations of the background values from the mean or average value for that particular area. We were thus able to conclude in the Payday area that Radon values of the order of 700-1000 counts per minute were not sufficiently high to be accounted as statistically significant indications of subsurface mineralization, since the odds are approximately equal that any values in this range are due to simple variations of the background. Further, when values at Payday of 1000 counts per minute or greater were encountered we were able to know the odds that that particular value did or did not represent a random background variation. For those values which exceeded 1000 counts per minute but were less than 1220 counts per minute the odds were 21:1 that any such value so high above the mean represents merely a random background variation. Similarly, for those values which exceeded 1220 counts per minute but were less than 1426 counts per minute the odds were only one in 369 that the high count was due merely to background. For values greater than 1426 counts per minute the odds were less than 1:16,000 that the high count was due merely to background. Therefore, in a survey such as this when we find a geographic grouping of high values the odds are only one in many thousands that the anomaly is merely a random grouping of random background values. This data evaluation

technique places a conclusion as to the area's mineralization distribution entirely outside the opinion of an interpreter of the data. The validity of a conclusion that an area shows abnormally high radioactivity when the data are evaluated on this basis is founded upon the most rigorous data evaluation that modern science provides.

To perform a Radon survey we would prefer to sample soil gases at depths of seven feet in an orderly, regular grid over the area. Test holes may be drilled with a hand auger or with an ordinary jackhammer since the hole size required is only about one inch in diameter. Into the test hole is introduced a sampling probe which provides a positive seal and means for assuring no contamination of the sample by leakage of the atmosphere down the hole. The gases withdrawn from the zone near the bottom of the hole are passed through an alpha-particle counting chamber with its associated scaler and/or rate meter and recording equipment. Activity determinations are made on a continuous, or flow basis, and the hole is pumped a sufficient length of time to insure that a representative sample of the soil gas is obtained free of contamination. Ordinarily, each determination requires from 10-15 minutes of pumping and counting time. Given access to an area and with reasonably easy drilling conditions the method is quite rapid. In the Elk Ridge area we have been routinely running from 20-30 determinations per day. Of course, the rapidity with which the area can be surveyed depends upon the spacing of the observation sites.

As an illustration of the results which can be obtained, I enclose a print of the Radon survey we recently completed over the First Notch Claims in the Elk Ridge area, San Juan County, Utah, wherein 256 radon determinations were made. We were aware at the beginning of the survey of the following facts:

(1) That a channel outcropped in the southern portion of the Carl Claim. At the site of the Carl mine some ore had been removed.

(2) That the channel probably coursed northeastward past the site of the ore-containing drill holes in the north central portion of the Look 4 claim.

(3) That, since mineralization is observable on the rim in the eastern portion of the Payday 3 claim, the channel probably continued northeastward toward that corner.

(4) That a considerable quantity of drilling by the AEC on the Carl, Carl 1 and Look 5 claims and farther to the northwest had revealed no mineralization of commercial importance.

The points of anomalously high Radon concentrations encountered by the survey are enclosed with a circle or a circle and a shaded central circle. Statistically, the probability that any one of the observations enclosed by a single circle is due to a random variation of the background count exceeds 21:1. The statistical probability that a single value which is enclosed by a circle with a shaded center circle is due to a random background variation exceeds 369:1. The statistical probability that such a single determination will exceed a value of 1527 due solely to a random background is greater than 16,000:1. Therefore, when we find that a group of observations of consistently high values, such as is observed here on the two Look 4 claims, the Look 6 claim and the Look claim, we may be sure that the odds are greater than 16,000:1 that the anomaly is not caused by random background variations. While we have not drilled this anomaly we fully expect to find that it is associated with a commercial deposit of ore. You will observe the rather blank nature of the "E" holes in the western portion of the survey which is an area covered by AEC drilling. You may also observe the rather low grade anomaly at the drill holes in the north central portion of the Look 4 claims. These holes show from one to four feet of ore of about .30 grade. Unfortunately, we were unable to survey farther to the south on the Look 4 claim because of the location of the Mossback rim, and could not, therefore, completely evaluate that locality. At the moment, we consider it justifiable to conclude that the survey on this group of claims has certainly indicated the location and trend of the potential ore-producing channel, and that it has indicated the best potential portion of that channel.

Generally, it is our experience in the Elk Ridge area that we can delineate with ease the course of Shinarump channels. We do not, however, have sufficient experience in drilling behind this work to conclude that all major anomalies, such as those on the First Notch claims, are necessarily indicative of commercial ore. Such an anomaly was observed over the Payday mine and over the Del-Wan mine (Del-Wan Drilling Company) in Woodenshoe Canyon. We have not observed such an anomaly and failed to find associated ore.

At the Western Mining Conference in Denver last February, the USGS presented a paper on the subject of geo-botanical surveying. As you are probably aware, this technique involves the sampling of limbs and leaves of the vegetation of an area and the direct analysis for the small quantities of uranium to be found in the ash of these organic samples. The theory is that uranium in the subsurface will be absorbed by the plants and will appear in the ash in direct proportion to the concentration in the soil. The

USGS presented their results as conclusively demonstrating the value of the geo-botanical approach and recommended to prospectors the application of the method in the search for uranium. If geo-botanical anomalies are valid indications of the uranium mineralization in the subsurface, then certainly such mineralization will produce a sufficiently high Radon concentration in these areas as to be easily detected by the Radon analysis. The Radon distribution map thus produced would be as good or better than the geo-botanical map, since certain obvious inadequacies in the sampling procedure for geo-botanical surveying do not hamper the Radon sampling technique.

The USGS stated that in the course of their work in the Elk Ridge area, a considerable number of geo-botanical anomalies were observed and that those anomalies so observed which had been drilled to the date of presentation of the paper, returned eight commercial ore bodies for every ten anomalies so tested. Therefore, we expect the Radon surveying in the Elk Ridge area to yield a high percentage of commercial ore bodies for the anomalies so developed.

To date, we have had experience with the method over ore bodies in the Shinarump in Elk Ridge, the Shinarump in Red Canyon, the Morrison in Cottonwood Wash, and the Morrison and the Todilto formations in the Grants, New Mexico area. The performance of the method has been unusually good and we anticipate no difficulty in its application to surveying in other areas and over other formations.

The short survey recently completed over your Avalanch area is our first experience with the method over Shinarump off Elk Ridge except for some work in Red Canyon. The work in the Avalanche area required seven working days during which time 61 Radon determinations were completed. Drilling in the area was quite difficult since the bulk of the area surveyed was over a Chinle tailus slope and the material at the surface there was saturated with water. Ordinarily, this amount of work should be accomplished in not more than three days.

The quantity of data obtained is not sufficient for a definitive statistical analysis. However, such an analysis has been made with results that are believed to be reliable so that a further demonstration to you can be made of the method's operation. The enclosed work map shows the locations of the Radon test sites, certain of your survey stations and the relative alpha activity values at the test sites in counts per minute. The mean background in the area apparently is around 770 counts per minute and from the data obtained it would appear that the statistical

distribution constant, sigma, is of the order of 361. These values are of the same order as those for the Payday area, the nearest area wherein we surveyed extensively, where the mean background was 620 counts per minute and the value of sigma was 206. It is not our belief, therefore, that additional data would materially change these indicated values for the Avalanche area.

For a particular value to be considered significantly high with respect to background in the Avalanche area, it should exceed 1492 counts per minute. Those values thus accounted anomalous are encircled on the accompanying map. The statistical odds against any of these values being attributable to background variations are in excess of 21:1. For any value which exceeds the mean plus three times sigma, or 1853, the odds are greater than 369:1 that the value is not attributable to background.

We understand that you have completed considerable drilling in this area, but we are unaware of the results obtained. We presume that your drilling was largely accomplished in an area known to contain Shinarump channel, therefore, we conclude that the bulk of this data was run in or near an expected mineralized area. We know that channels in this area are expected to trend northeast-southwest and we believe that probably the width of the channel extends from the vicinity of Radon test site one to Radon test site 15. A more general coverage of the outlying areas would be required before conclusions would be justified as to the direction of the channel.

The meager quantity of data obtained appears to indicate that mineralization within the channel is quite spotty. The best quality anomaly discovered involves the cluster of observations at sites 4, 5, 6, 7, and 23. If the area were not drilled, we would recommend the testing of that anomaly by drilling. We further would recommend drilling in the vicinity of Radon test sites 28, 29, 31, and 32, although only two contiguous sites might, by these limited data, be adjudged anomalous. You will note that sites 28, and 32 yielded values well above mean background. Similarly, we might recommend drilling near test sites 47, 48, 51 and 52 and near 55 and 56. However, additional Radon work in these two local areas would be a preferable next step. Ordinarily, we should like to have performed more work to the north and east and to the southwest before drawing such definitive conclusions as to specific drill locations.

We understand that you are willing that we should know the results of your drilling, and we would appreciate your furnishing these results to us as soon as it is conveniently possible.

Our charges for Radon survey are at the rate of $4000 per month plus direct cost of drilling test holes and building roads. In our previous operations most of the holes have been drilled with the jackhammer and drilling costs have been for rental on the hammer and compressor and the nominal cost of bits and steel. The cost for road-building, of course, depends upon the terrain to be surveyed. In reconnaissance exploration for ore bodies less than 300 feet in depth it has been our experience that a test site grid spacing of 200 feet suffices for the preliminary evaluation of the area. Such spacing would involve approximately 32 Radon determinations per claim. If the terrain is accessible, we could survey that number of claims in a day and half. We could, therefore, survey approximately 14 claims per month. If the drill costs amount to $500 per month and dozer work is not required, a Radon survey would then cost $321 per claim. Such an expenditure for most areas is less than the cost of a core hole to a depth of 200 feet and will yield for the operator a fair idea of the potential producing areas anywhere within the claim boundaries. Such a survey can be followed by additional detailed Radon surveying, as indicated by the preliminary 200 foot grid survey, and by the drilling of a limited number of holes with the result that the claim's potential is tested at a total cost very much less than can be had by drilling only.

We are at present seeking complete patent protection on the technique and instrumentation for accomplishing this work. Until such time as our position in this regard is secure, we must request that you consider the disclosures of this letter confidential, and we trust that you will be most discreet in any discussion you may have concerning the method.

We have not heretofore made a serious effort to provide this service to others; however, we have recently decided to offer such services to a selected clientele. We shall be happy to answer any questions which may occur to you concerning this technique and its application.

Very truly yours,

RADIO GEOPHYSICAL COMPANY

Robert M. Oliver

Robert M. Oliver
Vice President

rmo.a
enclosures

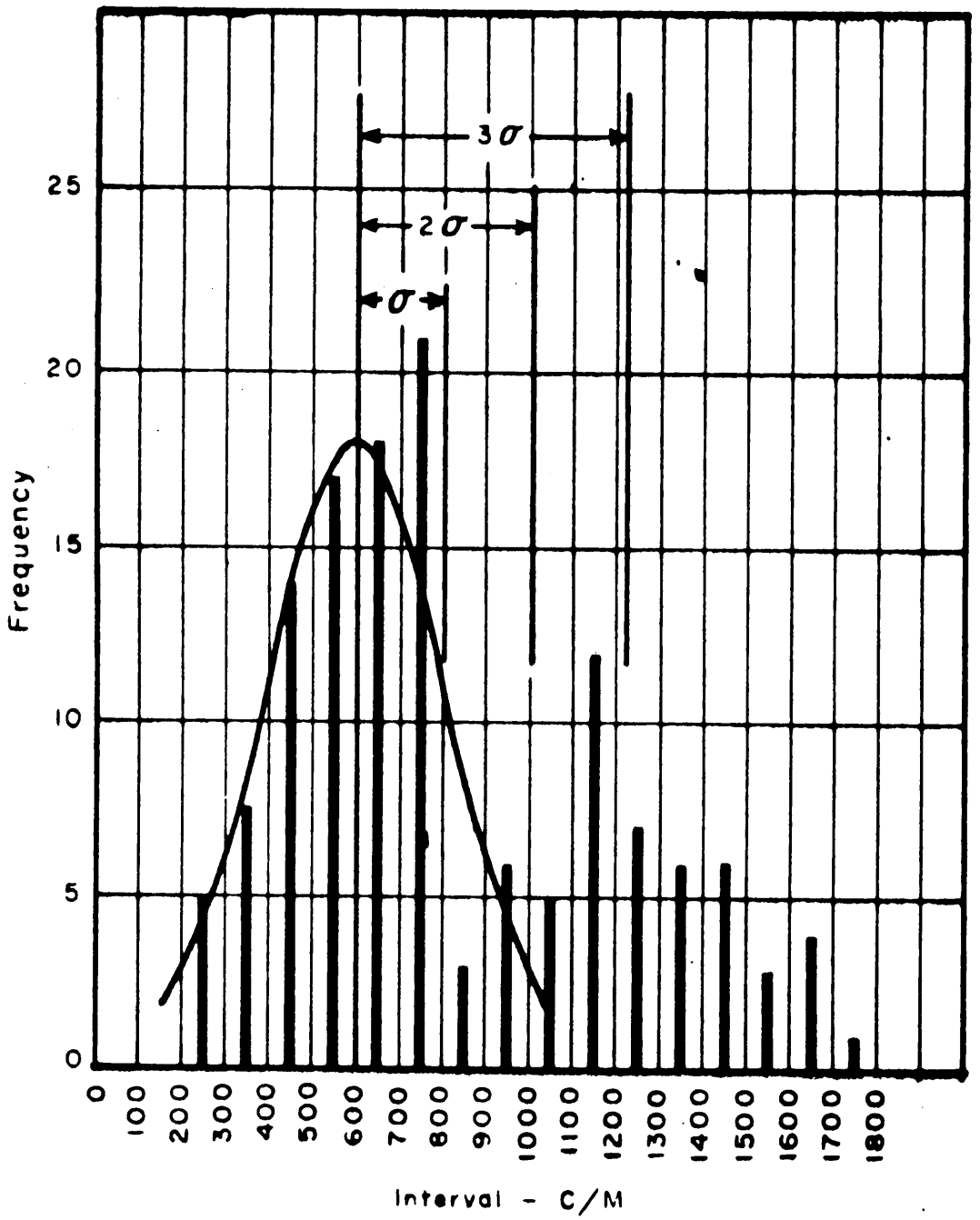
Mean Background – 620 C/M

σ = 206 C/M

Odds that a random background variation will exceed:

2σ – 21:1

3σ – 369:1



DISTRIBUTION OF RADON MEASUREMENTS

PAYDAY AREA

San Juan Co, Utah

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RECEIVED JUN 1957

DATE	INITIALS	CODE

Report of a Radon Survey

conducted in the

KING JAMES, KING EDWARDS, and AVALANCHIE AREAS
MONTICELLO MINING DISTRICT
SAN JUAN COUNTY, UTAH

for

SUNSHINE MINING COMPANY
Blanding, Utah

by

Kiva Explorations, Inc.
5209 North Lamar Blvd.
Austin 5, Texas

April 17, 1957

Surveys 102A, 102B, 102C

The King James, King Edwards and Avalanche 13 areas are portions of a larger area owned by the Sunshine Mining Company in the Upper Cottonwood Wash, Monticello Mining District, approximately 20 miles northwest of Blanding, San Juan County, Utah. Specifically, the King James area covers the King James and Virgene claims in the northwest quarter of Section 27, Township 34 South, Range 20 East, Salt Lake Meridian. The Avalanchie 13 area contains claims Avalanchie 13, Avalanchie 1, and Black Bean, all located in the southwest quarter of the same section. The King Edward, Avalanche 9 and the Ajax 1 claims, all in the southeast quarter of Section 34, Township 34 South, Range 20 East, Salt Lake Meridian, make up the King Edwards area. Although designated as three separate survey areas, the exploration results are reported together since the geology, the exploration problems and the results obtained in the respective areas are quite similar.

In the survey areas a combination of structural and erosive features result in an extremely rough surface topography. The Cottonwood Wash is a strike valley which has been cut into the less resistant Chinle shales along the east flank of a steep structural feature known as the Comb monocline. The erosion valley trends generally north-south with local changes to northwest-southeast. The bottom of the present canyon falls approximately along the line where the steeply dipping strata from the monocline reverts to a more gentle regional dip to the east.

The King Edward and Avalanche areas are located on the west side of the Cottonwood Wash on the flank of the monocline. The King James area lies north and east of the valley floor in a locality in which the strata have reverted to a regional eastward dip of about 5°.

Rocks exposed in the area are Triassic in age. Practically all of the surveyed area is underlain directly by the Mossback sandstone member of the Chinle formation. Remnants of the Upper Chinle shale and talus cover some portions of the areas. The ore-bearing Shinarump conglomerate and the underlying Moenkopi siltstone members are exposed in the Cottonwood Wash, and massive Triassic Wingate and Jurassic Navajo sandstone remnants cap the high mesas east of the Wash.

Uranium ore production in the area is from the Shinarump conglomerate. From outcrops and rim exposures it is apparent that the Shinarump is

continuous over the area and is thickened where it has filled ancient Triassic stream channels that have cut into the underlying Moenkopi formation. Ordinarily, the channels are rather wide and shallow and in the areas surveyed underlie the surface at depths of 100-300 feet. Ore occurrences are generally confined to the channel courses, but local structure may have exercised some control in the mineral deposition. Judging by the occurrences of mineralization mapped to date there is not always direct correspondence of the mineralization with the channel courses and flow structures. Minor crustal folds which cross-cut the channel courses and which parallel the major monocline feature to the west have been observed. These secondary folds may have modified the Shinarump channels as structural traps. Uranium production has been realized from each of the survey areas. The average grade of ore has been approximately 0.27% U_3O_8.

The objective of the Radon surveys was to reconnoiter those portions of the areas as were designated by the client in an effort to locate significant Radon distribution patterns to be used as guides for drill development of the prospect areas. The enclosed maps of each of the areas show the survey area locations, the location of such underground development as has been accomplished, and the various sites at which Radon analyses were made. The maps also show the relative alpha activities observed at each such site.

Field work was begun February 10, 1957 and concluded March 27, 1957. The progress of the survey was seriously hampered by inclement weather and by equipment failures. During that period 209 Radon analyses were made in the King Edwards area, 146 analyses in the King James area, and 104 in the Avalanchie 13 area--a total of 459 determinations. For the purpose of statistical analysis, data from all the areas are treated as one set of survey data. In the fall of 1956, Radio Geophysical Company performed a demonstration survey of 61 Radon observations over the north central portion of the Avalanchie 13 area. These data were included in the statistical analysis of the data from the general area.

The analysis of the data reveals that the mean background alpha activity value, with the equipment utlized for the survey, is approximately 450 counts per minute. The standard deviation, σ, for the distribution of background values about this mean was calculated to be 224 counts per minute. In order for a particular observation to be adjudged significantly at variance with the expected background distribution, such datum should vary from the mean background value by twice σ or more. Therefore, to be considered anomalously high with respect to the background a particular value should

exceed 898 counts per minute. For the background distribution observed the odds that a particular value will exceed 900 counts per minute due solely to random variations of the background are calculated to be only 1:20. It is, therefore, quite probable that a value of 900 or more is anomalous, with respect to the background. On the enclosed maps of the three areas those values exceeding 1000 counts per minute have been encircled. The acceptance of the 1000-counts-per-minute value as a minimum significant level was made to assure with certainty that the site so adjudged was actually anomalous. The statistical probability that a single value which exceeds 1000 counts per minute is attributable to a random variation of the background is quite low, and the odds that any such particular value is merely a random background variation are only 1:47. Therefore, when several contiguous observation sites yield values exceeding 1000 counts per minute, the probability is high that such values are not background values but are indicative of the presence of an area relatively high in mineral concentration.

Since the results of the Radon surveys are intended to be used as guides for drilling, groups of contiguous sites at which significantly high Radon observations were made have been conveniently enclosed by possible ore-body outlines. These areas are designated as "prospects". It is not uncommon to observe isolated low Radon values in areas which are otherwise indicated to be rather well mineralized. The enclosure, therefore, of a few low values with many high ones in an outline does not necessarily down-grade the prospect. However, experience has shown that when a relatively large area is covered by a group of anomalous values and when the ratio of anomalous to non-anomalous values observed therein is high, it may be concluded with greater certainty that the anomaly indicates mineralization of commercial grade and quantity.

King Edwards Area

As may be noted on the map the major portion of the 209 Radon analyses in the King Edwards area were performed on the King Edward claim proper. The values adjudged anomalous indicate the probable existence of a north-south trending area of mineralization which bisects the King Edward claim. This trend is parallel to the Comb monocline and is approximately perpendicular to the Shinarump channel course which has been demonstrated by the underground development in the eastern portion of the King Edward claim. These considerations support the postulation that uranium mineralization may be controlled by secondary crustal folds which parallel the

major structure feature and have created favorable structural conditions for the ore deposition. The trend continues southward from the King Edward claim as far as the limits of the survey area. A continuation of this trend northward is less definite but its possible existence is indicated by the few scattered anomalous points across the Avalanche 9 and Ajax 1 claims. Due to the sparseness of data on these latter claims, however, the projection of the trend is by no means certain. The bulk of the data collected in the western extremity of King Edward claim yielded values attributable only to random background variations with the exception of two isolated anomalous points at sites 75 and 81 in the far western extremity of the surveyed area. It is believed that these points lie within a continuation of the Shinarump channel to the west and may indicate the existence of a uranium ore deposit to the west of the survey area along the channel. The Radon data indicate that mineralization in the postulated ore trend is rather sporadically distributed, although some of the indicated ore bodies may be of appreciable size.

In the King Edward area seven Radon anomalies were observed. The most prominent and extensive anomaly has been designated as Prospect 1. This anomaly, as outlined, includes 29 anomalous Radon values and five non-anomalous values, and very clearly depicts the north-south orientation of the mineralization trend. It is recommended that this anomaly be tested with a series of drill holes extending approximately from observation site 102 southward to observation site 8 and from observation site 123 westward to observation site 108.

The second best Radon anomaly observed has been designated as Prospect 2 which includes five anomalous values and one non-anomalous value. This prospect area appears to be well separated from Prospect 1. It is downgraded with respect to Prospect 1, however, merely because of the indicated size of the mineralized area. It is recommended that this prospect be tested by drilling.

The area designated as Prospect 3 is considered the third best Radon anomaly observed and includes four anomalous points and three non-anomalous points. Two of the non-anomalous points, however, exceed 900 counts per minute in value. For reasons discussed above this prospect area may not be separate from Prospect 1. It is presented, however, as a third area because of the consistently low values observed at sites 126 through 133 which appear quite definitely to separate the two prospect areas. Drilling in the Prospect 3 area is recommended only after good

mineralization has been demonstrated in Prospect 1. Prospects 4 and 5, each, contain two anomalous values and two non-anomalous values. The non-anomalous values, however, exceed 900 counts per minute in value. These prospects are down-graded because of their size, and drilling is recommended only after mineralization has been discovered in the first three prospect areas. The Prospect areas 6 and 7 are considered to possibly indicate the existence of mineralization outlying to the area surveyed. It is recommended that the Radon survey be extended farther west from Prospect 7 and farther south from Prospect 6 in order to evaluate the quality of these anomalies. The few isolated single anomalous values observed elsewhere in the survey area are not considered indicative of commercial uranium mineralization. It is known, for example, that survey site 150, which yielded an anomalous activity value, is near a drill hole which discovered a small pocket of commercial grade mineralization. Any of the other isolated single values may indicate similar small ore deposits. Such a conclusion is not necessarily valid, however, when the data are as sparse as at present on the Avalanche 9 and Ajax 1 claims. It is recommended, therefore, that additional Radon observations be made in the vicinity of those isolated single point anomalies to establish whether or not worthwhile mineralization exists nearby.

King James Area

Of the 146 Radon observations made in the King James area, 135 were in the expected background range and condemn the major portion of the King James and Virgene claims for uranium production. However, two possibly productive areas were discovered, the better of which has been designated as Prospect 1. The outline as drawn encompasses ten anomalous values and two non-anomalous values, and indicates a rather narrow but long north-south trending mineralized area. The survey was not sufficiently extensive to limit the mineralized area either to the south or to the north. Neither were its limits established with certainty to the east. It is recommended that this area be tested by drilling with holes generally located along the east line of the Virgene claim from observation site 124 to the northeast corner of the claim.

The area designated as Prospect 2 encompasses two sites at which anomalous Radon values were observed. This anomaly is down-graded with respect to Prospect 1 because of its size. The data definitely limit the extent of this mineralized area to the northeast and west. It could possibly extend farther south and to the southeast toward the King James drift. It is recommended that this prospect be tested with one or two drill holes.

Avalanchie 13 Area

The data shown by the map of the Avalanchie 13 area includes the 61 observations made in that area previously by the Radio Geophysical Company. The small, but good quality, Radon anomaly observed over the known ore body near the terminus of the underground development is outlined.

The survey over the area farther south yielded evidence that uranium mineralization is sporadically distributed over the area. Because of the geographic locations of the mineralized portions of the Avalanchie 13 and King James areas, the possibility is recognized that a broad northeast-southwest trending channel may pass through the two areas. Since the Avalanchie 13 area is on the flank of the Comb monocline, and if it is accepted that secondary folds have controlled ore deposition, it would be expected that ore bodies in the Avalanchie 13 area would be generally oriented along the strike of the monocline and approximately perpendicular to the channel course. Such a condition is suggested by the Radon data observed which may be associated into east-west oriented anomalies dispersed in a general north-south trend.

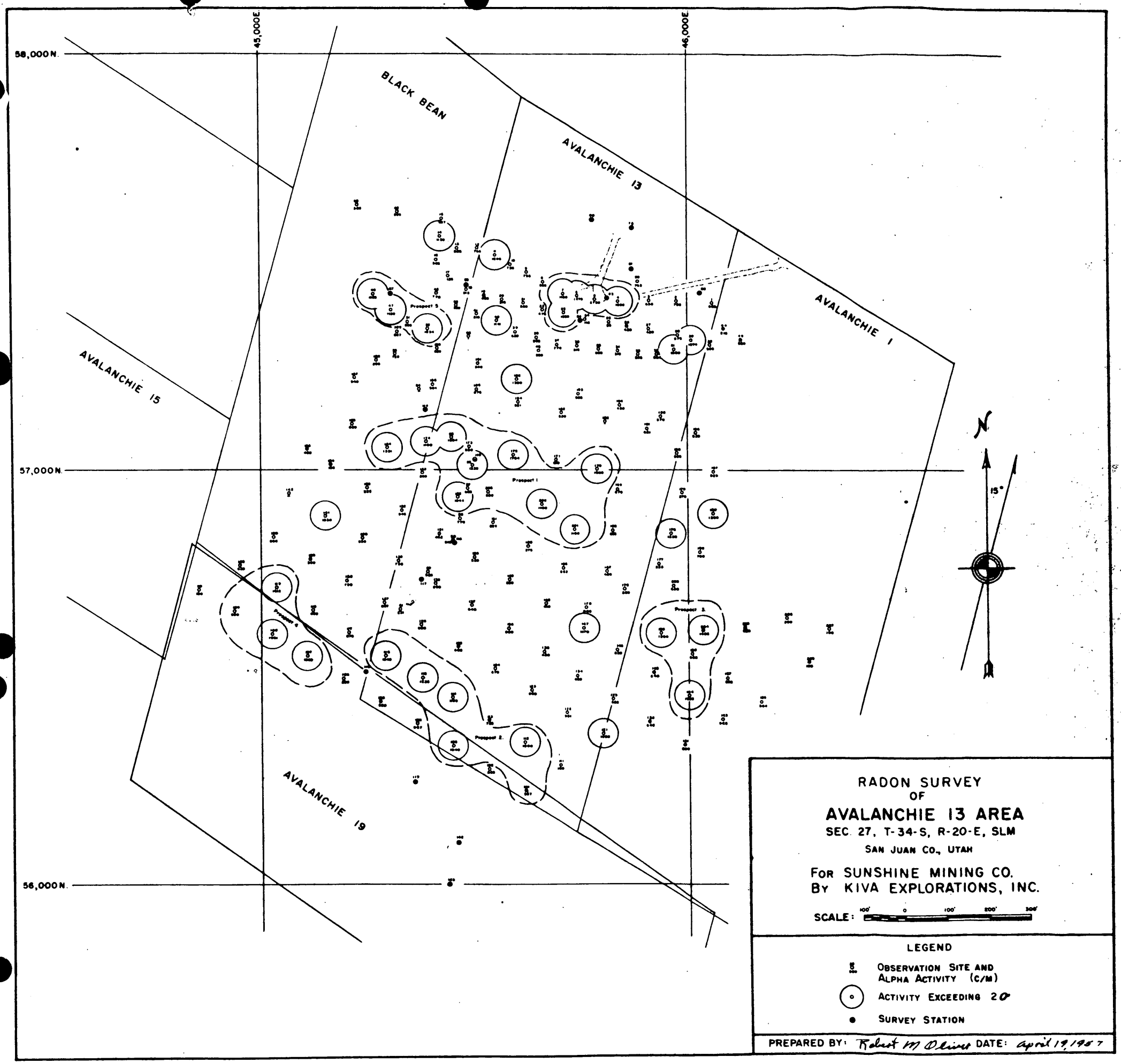
The area designated as Prospect 1 encompasses nine anomalous Radon sites and three non-anomalous Radon sites. This prospect warrants drilling and it is recommended that such drilling be done along the profile running from site 201 westerly to site 174. Near the south extremity of the survey area Prospect 2 has been outlined to include five anomalous observations and one non-anomalous observation which exceeds the value of 900. This prospect also warrants drilling which should be performed along a profile extending approximately from site 112 westerly to site 116. Prospects 3, 4, and 5 each were outlined to include three anomalous and one non-anomalous values. It is recommended that these smaller prospect areas be drilled only after the demonstration of mineralization underlying Prospects 1 and 2 has been accomplished.

It is indicated by the Radon surveys in the King James to Avalanche 13 areas that the surveys may be profitably extended to the south of the Avalanche area and to the northeast of the King James area. Such additional work should establish definitively the trend of the channel through that general area.

Respectfully submitted,

Robert M. Oliver

Robert M. Oliver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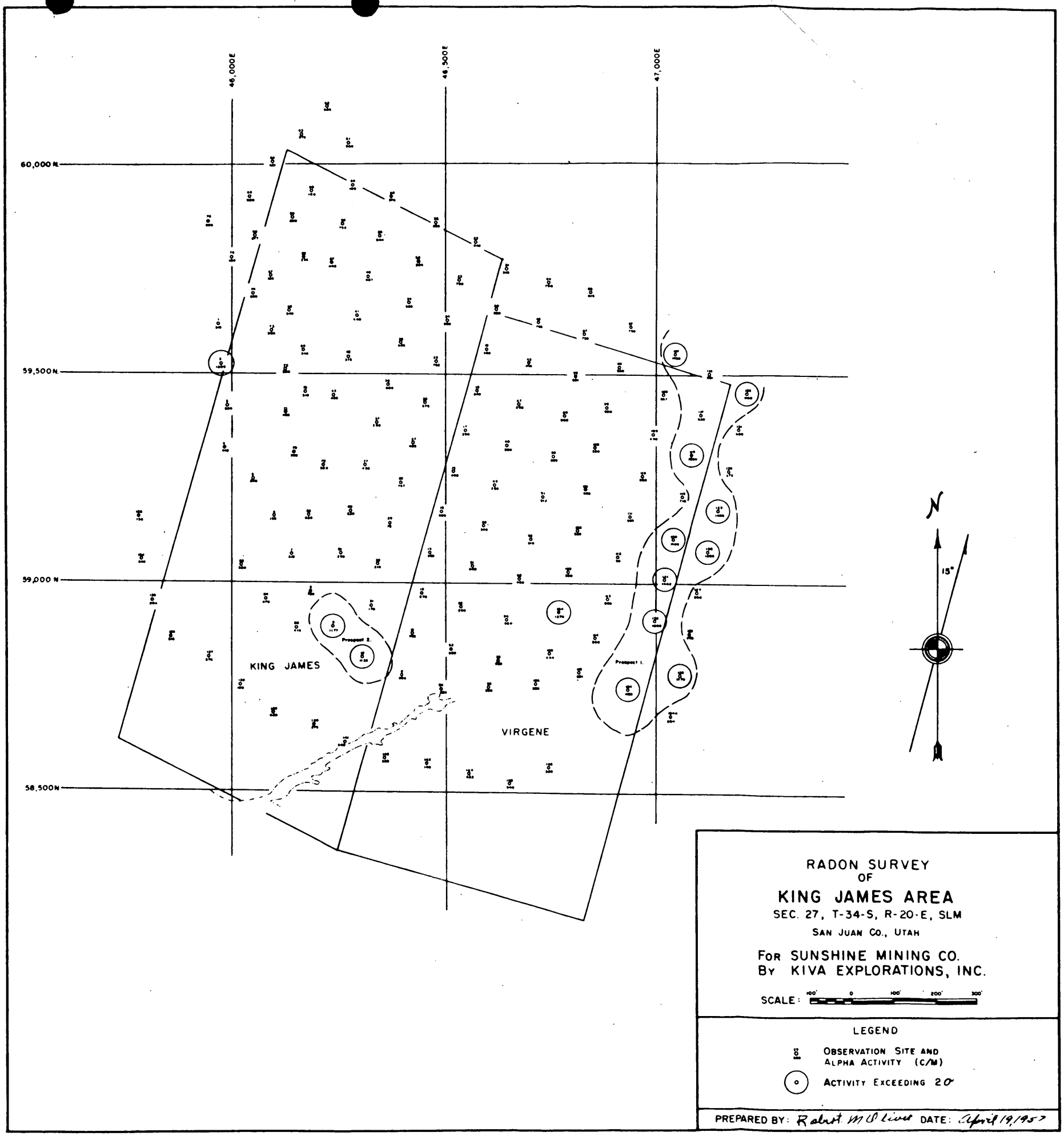
RADON SURVEY
OF
AVALANCHIE 13 AREA
SEC. 27, T-34-S, R-20-E, SLM
SAN JUAN CO., UTAH
FOR SUNSHINE MINING CO.
BY KIVA EXPLORATIONS, INC.
SCALE:
100' 0 100' 200' 300'
LEGEND
OBSERVATION SITE AND ALPHA ACTIVITY (C/M)
ACTIVITY EXCEEDING 20
SURVEY STATION
PREPARED BY: Robert M Oliver DATE: april 19, 1957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OF
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SAN JUAN CO., UTAH
FOR SUNSHINE MINING CO.
BY KIVA EXPLORATIONS, INC.
SCALE:
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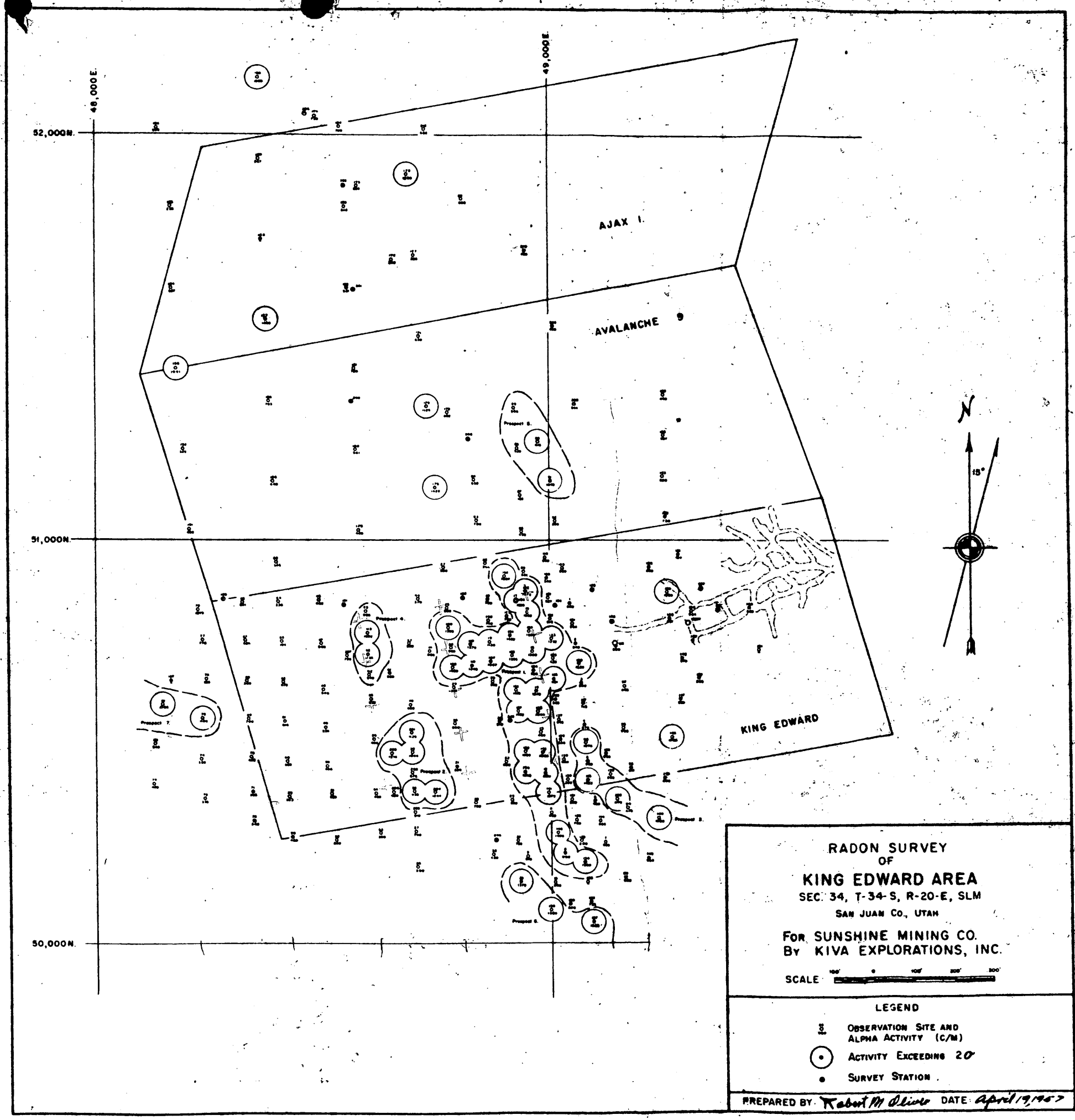
LEGEND
OBSERVATION SITE AND
ALPHA ACTIVITY (C/M)
ACTIVITY EXCEEDING 20
PREPARED BY: Robert M. Olive
DATE: April 19, 1957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RADON SURVEY
OF
KING EDWARD AREA
SEC. 34, T-34-S, R-20-E, SLM
SAN JUAN CO., UTAH
FOR SUNSHINE MINING CO.
BY KIVA EXPLORATIONS, INC.
SCALE
LEGEND
OBSERVATION SITE AND ALPHA ACTIVITY (C/M)
ACTIVITY EXCEEDING 2σ
SURVEY STATION
PREPARED BY Robert M Olivo DATE April 19, 1957

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Miss Logan Admin. Office SOL	RUN STOP		RUN STOP
Mr. Schiffer Rm 2659	RUN STOP		RUN STOP
Bureau of Mines [illegible]	RUN STOP		RUN STOP
Mr. [illegible] OMEA Rm-4454	RUN STOP		RUN STOP
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Mr. McCormack Personnel Officer	RUN / STOP		RUN / STOP
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~~Personnel Dr.~~	RUN / STOP		RUN / STOP
	RUN / STOP	B. J. Peterson 1201 Arlington Towers	RUN / STOP
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Date	Surname	Code
1/3/58	Knouse	700
"	Ellis	700
1/6	Selfridge	120
		~~220~~
		~~225~~
6	Mittendorf	100
1/6	Cy	220
		225

JAN 6 1958

Mr. E. E. Eddy
District Manager
Sunshine Mining Company
920 Patterson Building
Denver 2, Colorado

Re: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Dear Mr. Eddy:

As requested in your letter of December 31, 1957, we have withdrawn your application to explore the subject property from our active list.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FLKnouse/gla
1-3-58
cc to: Admr.'s Reading File
THKiilsgaard, 5224
FLKnouse
DMEA Field Team, Region III (2)
w/2cc Applicant's letter 12/31/57

8623

Sunshine Mining Company

Petroleum Division

920 PATTERSON BUILDING — ACOMA 2-0681
DENVER 2, COLORADO

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DATE	INITIALS	CODE
1/3	gb	220
"	Kilouse	700

December 31, 1957

United States Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

RE: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Gentlemen:

Please be advised that work done in this area subsequent to the submittal of subject application has developed the conclusion that the requested exploration program or any modification thereof is not justified from our point of view. We are, therefore, by this letter advising you of our desire to withdraw the subject application.

Sincerely yours,

SUNSHINE MINING COMPANY

E. E. Eddy,
District Manager

EEE:alw

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Date	Surname	Code
12/20	Knouse	700
"	Ellis	700
"	Mittendorf	100
12/20	C	220
		700

DEC 20 1957

Mr. E. E. Eddy
Manager
Sunshine Mining Company
Box 474
Blanding, Utah

Re: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Dear Mr. Eddy:

Reference is made to our letters of October 14 and November 20, 1957, requesting additional information concerning the subject application for exploration assistance.

We wish to cooperate with you fully in allowing ample time to supply the requested information; however, we cannot indefinitely postpone action on an application. Therefore, if we do not receive the requested information within 30 days from the date of this letter, we will assume that you are no longer interested in proceeding with your application, and we will consider it as having been withdrawn.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FLKnouse/gla
12-20-57
cc to: Admr.'s Reading File
THKiilsgaard, Rm. 5224
Mr. Knouse
DMEA Field Team, Region III (2)

8623

DMEA Form 7
(12-56)

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Date	Surname	Code
11/20	Knouse	700
"	Ellis	700
"	Mattenberg	100
11/20	gb	220
		700

NOV 20 1957

Mr. E. E. Eddy,
Manager
Sunshine Mining Company
Box 474
Blanding, Utah

Re: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Dear Mr. Eddy:

Reference is made to the Administrator's letter, dated October 14, 1957, relating to the subject application.

Action on your application is pending receipt of the information requested in the above-mentioned letter. If you require additional time to compile the requested information, please advise us.

Sincerely yours,

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

FLKnouse/gla
11-20-57
cc to: Admr.'s Reading File
THKiilsgaard, 5224
FLKnouse
DMEA Field Team, Region III (2)

8623

OFFICIAL FILE COPY

Date	Surname	Code
10/11	Knouse	700
10/14	Selbridge	120
"	Johnson	110
"	Mittendorf	100
10/15	B	220
		700

OCT 14 1957

Mr. E. E. Eddy,
Manager
Sunshine Mining Company
Box 474
Blanding, Utah

Re: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Dear Mr. Eddy:

Reference is made to the subject application for aid in an exploration project on the King Edward Claim, San Juan County, Utah.

A study of your proposed project and the report of our Field Team indicates that sufficient land is not included for the purposes of a contract. The surrounding area would no doubt be benefited by the proposed work and it would be to your advantage as well as the Government's to include the Avalanchie No. 6, Avalanche No. 3, Avalanche No. 9, and the Buckskin No. 1 claims in addition to the King Edward claim.

It will be necessary that you furnish us with evidence of the property rights in each of the above identified claims. In the event that a contract is granted, it will also be necessary to have Consent to Lien and Subordination Agreements for each of said claims executed by the proper parties as well as by Clayton Silver Mines, Inc., Silver Syndicate, and the Sunshine Consolidated Mining Company covering their respective one-sixth interests in the King Edward claim. If you are agreeable to including the above-mentioned claims in the proposed project, please advise promptly so that processing of this application can be continued without delay.

Sincerely yours,

C. O. Mittendorf
Administrator

RWLongse/FEJohnson/gla
10-11-57
cc to: Admr.'s Reading File
THKiilsgaard, Rm. 5224
F. L. Knouse
DMEA Field Team, Region III (2)

8623

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Date	Surname	Code
	Long	
	[illegible]	
10/9	Kaufer	700
Noted 10/10	Jeffridge	[illegible]
		100
		200

220
700

Mr. E. E. Eddy, Manager
Sunshine Mining Company
738 Peyton Building
Spokane 1, Washington

Re: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Dear Mr. Eddy:

It is our belief that it will be more to your advantage and to the Government's, if the area to be explored were extended to include, in addition to the King Edward, the Avalanchie No. 6, the Avalanche No. 3, the Avalanche No. 9, and the Buckskin No. 1 Claims.

It is my understanding that the field team has discussed an alternate three-stage program with you and that you are in general agreement with this alternate program.

Accordingly, it will be appreciated if you will furnish us with evidence of your property rights in each of the above identified claims and if you will have the attached Consent to Lien and Subordination Agreements for each of said claims executed by the proper parties.

There is also attached a Consent to Lien and Subordination Agreement covering the outstanding one-sixth interests of the Clayton Silver Mines, Inc., the Silver Syndicate, and the Sunshine

Consolidated Mining Company in the King Edward Claim. It will be appreciated if you will have this properly executed and returned to us.

In the meantime we will continue to process your application.

Sincerely yours,

Administrator

Attachments

RWLong:md
10/7/57

CC: DMEA Docket
Admin. Reading File
Operating Com.
T. H. Killsgaard
E. M. Ellis
J. E. Crawford
R. P. Dwyer
R. W. Long
Field Team, Region III (2)
Chron.
Pending

Surnamed
FLKnouse
EWEllis

Typed 9/20

September 23, 1957

Memorandum

To: Associate Solicitor, Division of Mineral Resources

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

Subject: Docket No. DMEA-4756 (Uranium)
Sunshine Mining Company
King Edward Claim
San Juan County, Utah

Please review the file of the subject proposed project and determine if any additional documents will be required to draft a contract. Please refer to the memorandum, dated September 12, 1957, from the Executive Officer, Region III, (last paragraph), and also to pages 3 and 4 of the Field Team report concerning this question.

You will note that in addition to the King Edward claim, the Applicant should be requested to include the Avalanche No. 6, Avalanche Nos. 3 and 9, and Buckskin No. 1 claims. There is attached a proposed draft of a Consent to Lien and Subordination Agreement that lists the claims to be included in the contract and where they are located.

Please prepare the necessary letter to the Applicant for the signature of the Administrator, requesting, if necessary, any additional documents. Also, prepare the necessary Consent to Lien and Subordination Agreements to be sent with the letter.

/s/ Ernest Wm. Ellis

Ernest Wm. Ellis

EWEllis/izm 9-20-57
cc: Mr. Knouse

Inserted in docket for information in lieu of official docket copy which was misplaced and is being traced by Legal Division

MF-205 DRAFT
(Combines and supercedes MF-2[illegible] and MF-203)
June 1956

[illegible] Government's Use Only
EXPLO[illegible]TION PROJECT CONTRACT
Operator Sunshine Mining Company
Docket No. DMEA- 4756
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of San Juan, State of Utah, described as follows: 2/

Unpatented mining claims as follows: King Edward, Avalanchie No. 6 and Avalanche No. 9 and part of Avalanche No. 3 and Buckskin No. 1, all in sec. 34, T. 34 S., R. 20 E., SLM&B and also part of Avalanche No.3, and Buckskin No. 1 in secs. 2 and 3, T. 35 S., R. 20 E., SLM&B,

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

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

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

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this _____ day of _____, 195__.

Sunshine Consolidated, Inc.	[Seal]	102 Sidney Building Kellogg, Idaho	[Address]
Clayton Silver Mines	[Seal]	Wallace, Idaho	[Address]
Silver Syndicate, Inc.	[Seal]	Kellogg, Idaho	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 19 1957
IN REPLY REFER TO

DATE	INITIALS	CODE
9/19	B	220
"	Kasson	700
	Complete	

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

September 18, 1957
Re: DMEA 4756
Sunshine Mining Co.
King Edward Claim
San Jaun County, Utah
Appl. Est. $16,176.01
Rec'd Est. $20,415.83 - Uranium

Memorandum

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

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

Subject: Review of Field Team Report

The applicant requested assistance in testing by core and non-core drilling the westerly part of a claim classed as prospective, based on results of a radon survey.

On the east end of the claim is the Ransom mine which has produced 10,270 tons of 0.2% U_3O_8. The operator of the mine has drilled 11 holes in what would appear to be the most likely extension of the orebody. Two holes are shown as ore holes and both have been investigated by drifts but no large orebody was found. The drilling requested and recommended by the examiners would prospect the area to the west of the most westerly row of four essentially barren to semi-barren holes.

Ore remaining in the mine is estimated at:-

Thickness Feet	Tons	Grade $\%U_3O_8$
5.4	3,356	0.44

The mine is in the project area.

The limits of the known orebody appear to have been determined but in the opinion of the examiners..."the favorable ore-bearing lithology may extend at least several hundreds of feet westerly and southwesterly from the exposures in the Ransom mine ore body (about 14,000 tons of ore of slightly more than 0.30% U_3O_8."

The examiners and Field Team recommend a 3-stage drilling program, the estimated cost of which is $20,415.83.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

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DMEA
RECEIVED SEP 18 1957

DATE	INITIALS	CODE
9/18	C	220
"	FLK	700

September 17, 1957

4756

Uranium
Sunshine Mining Company
King Edward Claim
San Juan County, Utah
$20,415.83

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: James Paone, Bureau of Mines Member
Uranium Commodity Committee

Subject: Review of [illegible] Field Team Report

1. Date of project [illegible]: 9/11/57 [illegible] 9/17/57

2. Prior report [illegible]

4. Prior [illegible]

5. Information available on [illegible]: Yes [ ] No [ ]

6. Other comments [illegible]: Yes [ ] No [ ]

7. Explain [illegible]

8. Technical [illegible]
   a. Location [ ]
   b. Geology [ ]
   c. Extent of [illegible] [ ]
   d. Geology [ ]
   e. [illegible] [ ]
   f. Grade [ ]
   g. [illegible] [ ]

9. Action advised:
   a. Obtain information [illegible] [ ]
   b. Refer to [illegible] [ ]
   c. Denial [ ]
   d. Agree with [illegible] [x]
   e. [illegible]
   f. [illegible] [ ]
   g. [illegible] [ ]
   h. Agreement [x]

10. [illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 16 1957

DATE	INITIALS	CODE
9-16	C	220
		130
9-19	B	220
"	Bronze	700

September 12, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 4756 (Uranium) Sunshine Mining Company (King Edward Claim) San Juan County, Utah - Joint Report of Examination

Enclosed are the original and two copies of the Joint Report of Examination on the subject property by Carl Belser, USBM, and Fred R. Shawe, USGS.

The field examiners conclude that the probability for making a significant discovery is sufficiently promising to justify Government participation. Accordingly, they recommend that the Applicant's work proposal be approved, as modified by them, in which the Field Team concurs.

Also enclosed are eight extra copies of Figure 2 for use in the preparation of the contract.

Inasmuch as the ownership of land proposed for subordination is open to question, your office may wish to refer the matter to your Legal Section. We will appreciate the Legal Section of the Washington Office preparing all necessary Forms MF-205, Consent to Lien, for our forwarding to the proper persons.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

ON-SITE EXAM

Reviewed by
DMEA OPERATING COMMITTEE
9-18-57
(date)

IN REPLY REFER TO:

RECEIVED
SEP 6 1957
U. S. GEOLOGICAL SURVEY DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

P. O. Box 360
Grand Junction, Colorado

September 5, 1957

Reviewed by
DMEA OPERATING COMMITTEE
9-18-57
(date)

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler

TRANSMITTED
SEP 10 1957

Subject: Transmittal of joint engineering and geologic report, DMEA docket 4756 (Uranium), Sunshine Mining Company, King Edward claim, San Juan County, Utah.

The Sunshine Mining Company, Box 474, Blanding, Utah, applied to the Defense Minerals Exploration Administration for aid in a uranium exploration project on the King Edward unpatented claim in Section 34, T. 34 S., R. 20 E., SLM., San Juan County, Utah. The application was referred to the field and an examination was made on July 11 and 12 by Fred R. Shawe, U. S. Geological Survey, and Carl Belser, U. S. Bureau of Mines.

The general area of the King Edward claim is on the east flank of the Elk Ridge uplift in an area of relatively flat- to moderately steep-dipping beds. Two formations, the Chinle and Moenkopi, both Triassic in age, crop out in the immediate claim area. The eastern end of the King Edward claim has been developed by 2,175 feet of drifting, from which 10,270 tons of ore averaging 0.2 percent U_3O_8 has been produced. The ore occurs in the flat-bedded Triassic Shinarump conglomerate at its contact with the underlying Moenkopi shale and has been delineated as a 260 x 100-foot, N. 60° E., striking isolated ore lens.

Indications are that Moenkopi-Shinarump contact only rises about 50 feet from the end of the mine working to the west end of the claim and the examining team believes the chances of finding another ore lens in the western portion of the claim are good.

A three-stage exploration program is recommended consisting of 43 holes containing 8,990 feet of non-core drilling and 900 feet of core drilling in a series of three fences of holes extending southwesterly from the King Edward workings. The total estimated cost of the program is $20,415.83. Government participation of 75 percent will be $15,311.87.

The Atomic Energy Commission was consulted relative to the appraisal of the area and the memoranda of James Paone, U. S. Bureau of Mines, and N. E. Nelson, U. S. Geological Survey, were noted. I concur with the conclusions and recommendations of the examining team that the program herein outlined be completed.

DMEA 4756 9/5/57

Enclosed are 12 copies each of figures 3 and 4 for inclusion in the joint report and 22 copies of figure 2 showing the location of the proposed stage I drilling for inclusion in the report, as well as for the preparation of a contract.

J. William Hasler

J. William Hasler,
Geologist

JWH/mlr

Enclosures
Reports (10)
Figs. 3 and 4 (12)
Fig. 2 (22)

FOR UNITED STATES GOVERNMENT USE ONLY

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
SEP 12 1957

DMEA 4756

Sunshine Mining Company

King Edward Claim

San Juan County, Utah

OFFICIAL FILE COPY
D M E A
RECEIVED SEP 16 1957
DATE | CODE
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220

Uranium

Joint Engineering and Geologic Report

by

Fred R. Shawe
Geological Survey

Carl Belser
Bureau of Mines

August 1957

Reviewed by
DMEA OPERATING COMMITTEE
9-18-57
(date)

DMEA 4756
SUNSHINE MINING COMPANY
KING EDWARD CLAIM
SAN JUAN COUNTY, UTAH

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Joint Engineering and Geologic Report

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ILLUSTRATIONS

Figure	Follows page
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2. Geologic map of the King Edward claim and vicinity showing location alternate proposed Stage I drill holes, Sunshine Mining Co., San Juan County, Utah	18
3. Outline map of Sunshine Mining Company property showing the areal relationship of the King Edward claim and the other claims of the property that have produced uranium, King Edward claim, Sunshine Mining Co., San Juan Co., Utah.	18
4. Outline map of underground workings of the Ransom mine showing blocked out ore reserves and approximate limits of mineralization, King Edward mine, Sunshine Mining Co., San Juan County, Utah	18

DMEA 4756
SUNSHINE MINING COMPANY
KING EDWARD CLAIM
SAN JUAN COUNTY, UTAH

INTRODUCTION AND SUMMARY

Sunshine Mining Company, Box 474, Blanding, Utah on May 25, 1957 submitted an application to Defense Minerals Exploration Administration for aid in a uranium exploration project on the King Edward unpatented claim in section 34, T. 34 S., R. 20 E., SLM., San Juan County, Utah. The application called for 8,630 feet of non-core drilling and 570 feet of core drilling at a total estimated cost of $16,176.01.

A field examination was made on July 11-12, 1957. The eastern end of the King Edward claim has been developed by 2,175 lineal feet of 10 by 10-feet drifts from which 10,270 tons of 0.26 percent U_3O_8 has been produced. The ore occurs in the flat-bedded Triassic Shinarump conglomerate at its contact with the underlying Moenkopi shale and has been delineated as a 260 by 100-foot, N. 60° E. striking, isolated ore lens.

Indications are that Moenkopi-Shinarump contact only rises about 50 feet from the end of the mine working to the west end of the claim and the examining team believes that the chances of finding another ore lens in the western portion of the claim are good.

A three-stage exploration program was recommended consisting of 43 holes containing 8,990 feet of non-core drilling and 900 feet of

core drilling at a total estimated cost of $20,415.83. Government participation 75 percent, or $15,311.87.

ACKNOWLEDGMENTS

Donald P. Elston, geologist, USGS, and E. E. Eddy, representative of the applicant, accompanied the examining team on the inspection.

The Atomic Energy Commission was consulted regarding the area before the inspection was made.

Memorandums of James Paone and N. E. Nelson were noted.

LOCATION, TOPOGRAPHY, AND CLIMATE

The King Edward claim is near the south end of a large block of 167 unpatented claims. The King Edward claim is in the SE¼ sec. 34, T. 34 S., R. 20 E., SLM, San Juan County, Utah (fig. 1). The mine portal is on the bank of Cottonwood Creek at an altitude of 6,450 feet. From the portal the ground stopes upward to the west to an altitude of about 6,650 feet. The westerly 1,000 feet of the claim is on rolling ground ranging in altitudes from 6,650 to 6,730 feet.

The mine is connected by a fair access road with old Utah State Highway 95, 12 miles to the south, from whence Blanding, the nearest town is 13 miles to the east. From Blanding it is 22 miles north over paved Utah Highway 47 to Monticello, Utah, and from Monticello it is northerly 57 miles over U. S. Highway 160 to Moab and 93 miles to the Denver and Rio Grande Western railroad at Thompson, Utah.

HISTORY AND PRODUCTION

Uranium ore was discovered and the King Edward claim was located on July 12, 1952 by Clarence Rogers and Alma V. Jones. The Ransom Brothers Mining Company, a co-partnership acquired the property and began mining operations. The property was known as the Ransom mine. In August 1956 the Sunshine Mining Company obtained a quit claim to the King Edward mine, drilled several surface holes, rehabilitated the underground workings and outlined the known ore body.

Production amounts to 10,270 tons averaging 0.26 percent U_3O_8.

OWNERSHIP AND EXTENT

The applicant holds a block of 167 claims. The ownership of the southernmost claims (Buckskin 0, Avalanchie 25, and El Portal) are in doubt due to a delay in recording. The King Edward claim is owned by the applicant but it is believed that the surrounding claims (fig. 3) should be subordinated.

The claims are recorded in the Office of the County Recorder of San Juan County, Utah as follows:

Claim	Book	Page	Date Recorded	Recorded by
King Edward	15	223	7-12-52	Clarence Rogers & Alma V. Jones
Avalanchie 3	33	240	8-27-53	A.E. and Seth Shumway
Avalanchie 6	35	504	9-24-53	" " "
Avalanchie 9	35	529	9-24-53	" " "
Buckskin 1	275	238	1-19-55	Ray Ransom

Amended Surveys

Claim	Book	Page	Date Recorded	Amended by
King Edward	41	239	12-7-53	Seth Shumway, Alma Jones, Clarence and Leo Rogers
Avalanchie 3	291	323	4-2-55	Ransom Brothers Mining Co.
Avalanchie 6	291	319	4-2-55	"
Avalanchie 9	291	318	4-2-55	"

Avalanchie 3, 6, 9, and 13 were deeded to Ransom Brothers Mining Company by Seth, A. E., Grace, and Vivian Shumway and Leo Rogers on October 5, 1953, and are recorded in Book 13, Pages 362-368.

A quit claim deed was granted to Sunshine Mining Company on August 31, 1956 to the King James and King Edward claims by Ray J., Virgene, Glen A., and Imogene Ransom and the Ransom Brothers Mining Company, a co-partnership. The deed is recorded in Book 15, Page 223.

A 10-year lease agreement on the rest of the claims and dated August 31, 1956 was made between Ransom Brothers Mining Company, lessor, and Sunshine Mining Company, lessee.

The transfer of the King Edward claim to Ransom Brothers Mining Co. by Seth Shumway, Alma Jones, and Clarence and Leo Rogers was not found. However, the transfer must exist because the Ransom Brothers worked the claim for considerable time before selling it to the Sunshine Mining Co.

PRESENT STATUS

Exploration and Development

The property has been explored by 1,926 feet of rotary drilling and has been developed by 2,175 lineal feet of 10- by 10-foot drifts out of which 10,270 tons of ore has been shipped. All this work has been confined to the east one-third of the claim. An access road has been built across the west portion of the claim.

Mining and Milling Equipment and Other Facilities

There is no milling equipment on the property. Mining equipment consists of a single Gardner-Denver 210 c.f.m. compressor with a Caterpillar 318 engine, miscellaneous pipe and fittings, and an 8- by 10-foot frame and corrugated iron oil house. Other equipment, but not on the King Edward claim consists of:

2 room frame office
Several trailer houses
1 D-6 Caterpillar dozer with Caterpillar 318 engine
1 1949 Ford 2-ton flat-bed truck
1 Cleveland drill with air-leg
1 Gardner-Denver drill with air-leg
1 Ingersoll-Rand jackhammer
1 Titan chain saw
1 Babbel counter with probe
1 Blower and 16" ventilation pipe
1 single drun air hoist
1 400 gallon air receiver
1 250 gallon water tank
Miscellaneous pipe and fittings
2 Clark-Michigan loaders

GEOLOGY

The general area of the King Edward claim is on the east flank of the Elk Ridge uplift in an area of relatively flat to moderately steep dipping beds. Two formations, the Chinle and the Moenkopi formation, both Triassic in age, crop out in the immediate claim area (fig. 2).

The oldest of the two formations, the Moenkopi, consists of muscovite-bearing red-brown interbedded mudstone, siltstone, and rare thin sandstone. The red-brown color is commonly bleached to a greenish gray for thicknesses of 1-3 feet below the contact with the overlying Shinarump member of the Chinle formation and the bleaching is particularily noticeable in the vicinity of uranium deposits. The Moenkopi formation crops out along the bottom of Cottonwood Wash for the entire length of the property.

Three members of the Chinle formation are present in this area. Overlying the Moenkopi, with a marked erosional unconformity, is the Shinarump member of the Chinle formation. In this area, the Shinarump is composed of both flood plain- and channel-type sediments and consists of crossbedded coarse- to fine-grained sandstone and conglomeratic sandstone that contains interbedded mudstone and siltstone. The Shinarump is tan to pale orange; the pale orange color predominates, as it crops out in a discontinuous band along the walls of Cottonwood Wash. Thickness of the Shinarump ranges from a knife edge to about 50 feet; at the portal of the Ransom mine it is about 22 feet thick. The Shinarump member is the uranium ore-bearing horizon in this area.

The Monitor Butte shale member overlies the Shinarump, which is in turn overlain by the Moss Back sandstone member. The Monitor Butte shale consists of thin-bedded mudstone and sandy mudstone; in this area it is about 100 to 110 feet thick and crops out in a broad band along the walls of Cottonwood Wash. The Moss Back member is composed of massive crossbedded sandstone and occasional chert-pebble conglomerate that forms a conspicuous bench above the Ransom mine.

The strata strike northerly and dips range from almost 30° easterly about one mile west of the King Edward claim to generally less than 10° both easterly and westerly, in the immediate claim area. A syncline (fig. 2) trends northerly through the claim area, and about one mile east of and parallel to the syncline is a small open anticline. The trend of Cottonwood Wash in this area marks the general trend of the crest of this anticline.

ORE DEPOSITS

Very little is known of the history of this property. Production records furnished by the AEC show a continuous production from late in 1954 to early in 1957; a total of 10,270 tons of ore with an average grade of 0.26 percent U_3O_8. The ore contained about 0.2 percent copper; no vanadium is listed in the production records.

In addition to the production from the King Edward claim, the AEC records show production through 1956 of 446 tons of ore averaging 0.43 percent U_3O_8 from the Avalanchie 13 claim and 3,621 tons of ore averaging

0.28 percent U_3O_8 from the King James and Virgene claims (fig. 3).

One ore deposit, the Ransom mine deposit, is known on the King Edward claim. This ore deposit is irregular in outline with a maximum long dimension of about 260 feet and a maximum short dimension of about 125 feet. Surrounding the ore body, in plan, is a zone of ore-grade material that was considered too thin to mine, and, outward, a zone of sub-ore grade material. The exposed mineralized area is about 450 feet long and about 200 feet wide. Ore grade material ranges from a few inches to about 8 feet thick; in the area mined the ore averaged about 4.5 feet thick.

There is no well defined channel present here as is present in most Shinarump ore bodies to the west. However, there is a definite broad thickening of the Shinarump in the vicinity of the King Edward ore deposit, and some scouring into the Moenkopi can be detected. This scouring into the top of the Moenkopi is in the order of only three or four feet of depth for about 200 feet of width and is difficult to detect.

The uranium minerals are at the base of the Shinarump member in a fine- to coarse-grained cross-bedded sandstone that contains some intermixed cross-bedded chert-pebble conglomeratic sandstone. The ore minerals are in an environment of broad sweeping diastems that trend a little south of west and, most commonly, are below the sweeping cross-beds of the lower part of this system of diastems. In the western part of the mine, the trend of the favorable ore-bearing zone appears to turn in a more southerly direction. Beneath the ore body the Moenkopi mud and silt are bleached to a gray-green for from one to three feet below the Shinarump-Moenkopi contact.

The ore is easily followed by the bright yellow secondary uranium minerals that form on the mine walls. Copper sulphate minerals are also common along the mine walls, and in several places, the secondary cobalt mineral erythrite, not directly associated with ore minerals, was noted. The primary minerals are pyrite and chalcopyrite, and a black uranium-bearing material, uraninite (?) and/or coffinite (?). Carbon trash appears to be more abundant in the ore than in rock barren of ore minerals.

Figure 4 and the accompanying table show the blocked-out ore reserves. There are no indicated nor inferred ore reserves on the King Edward claim.

The trend of the favorable ore-bearing lithology may extend at least several hundreds of feet westerly and southwesterly from the exposures in the Ransom mine workings. Other ore deposits localized along the extension, if present, could be expected to be nearly equivalent in size to the Ransom mine ore body (about 14,000 tons of ore of slightly more than 0.30 percent U_3O_8 average).

SAMPLING AND ORE RESERVES

The pillars in the Ransom (King Edward) mine were checked with a counter as were other exposures both underground and on surface. No samples were taken for assaying. The applicant drilled 11 holes to the west of the main ore body and drifted to the two best holes but no large ore body resulted from this work.

The applicant has done extensive sampling of the underground workings and estimates 10 blocks, containing a total of 3,356 tons of ore averaging 0.44 percent U_3O_8. The applicant's reserve estimates follow:

Block	Area in Sq. ft.	Thickness feet	Tons	Grade % U_3O_8	Tons X Grade	Area X Thickness
a	702	4.5	243	0.27	66	31,590
b	336	8.0	207	0.20	41	26,880
c	1,140	5.8	508	0.63	320	66,120
d	724	3.8	212	0.53	112	27,512
e	1,805	6.0	883	0.57	475	108,300
f	192	6.5	96	0.32	31	12,480
g	1,874	5.3	764	0.39	298	99,322
h	144	4.0	44	0.32	14	5,760
i	464	3.8	136	0.36	49	17,632
j	627	6.5	313	0.22	69	40,755
Total (10)	8,008		3,356		1,475	436,351
Average		5.4		0.44		

APPLICANT'S PROPOSED PROGRAM AND COSTS

The applicant proposed a two-stage program. Stage I consisted of 15 holes in three rows 200 feet apart, the holes drilled on 100-foot centers and containing 2,400 feet of rotary drilling and 360 feet of core drilling. Stage II consisted of 28 offset holes drilled on 50-foot centers and containing 6,230 feet of rotary drilling and 210 feet of core drilling. The applicant's estimate follows:

Stage I

Independent Contracts

2,400 feet rotary drilling at $1.35/ft.	$3,240.00	
360 ft. NX core drilling at $3.75/ft.	1,450.00	
2,760 feet radiometric logging at $0.75/ft.	138.00	
15 core boxes at $5.00 each	75.00	
Total independent contracts		$4,903.00

Labor and Supervision

Engineering supervision 1½ mo. at $550/mo.	$ 825.00	
Total labor and supervision		$ 825.00

Operating materials and supplies

None

Operating equipment (rental)

40 hours D-6 rental at $6.50/hr.	$ 260.00

Rehabilitation and repairs

None

New Buildings, improvements, installations

None

Miscellaneous

Workman's compensation, liability ins. and payroll taxes $825.00 at 9.42%	$ 77.71

Contingencies

None

Estimated cost of Stage I (2,760 feet of drilling)	$6,065.71
Estimated cost per foot	$ 2.20
Assaying 12 determinations for U_3O_8 at $5.00/ea.	$ 60.00
Total estimated cost of Stage I	$6,125.71

Stage II

Independent Contracts

6,250 feet rotary drilling at $1.30/ft.	$8,099.00	
210 ft. core drilling at $3.75/ft.	787.50	
6,644 ft. radiometric logging at $0.05/ft.	322.00	
9 core boxes at $5.00 each	45.00	
Total independent contracts		$9,253.50

Labor and supervision

Engineering supervision 1 mo. at $550/mo.	$ 550.00	
Total labor and supervision		$ 550.00

Operating materials and supplies

None

Operating equipment (rental)

10 hours D-6 bulldozer rental at $6.50/hr.	$ 65.00

Rehabilitation and repairs

None

New buildings, improvements, installations

None

Miscellaneous

Workmen's compensation, liability ins. and payroll taxes. $550.00 at 9.42% ($51.71)	$ 51.30

Contingencies

None

Estimated cost of Stage II (6,440 ft. of drilling) ($9,909.80)	$9,910.30
Estimated cost per foot	$ 1.54
Assaying 28 determinations for U_3O_8 at $5.00/ea.	$ 140.00
Total estimated cost of Stage II	$10,050.30
Total estimated cost of project	$16,176.01

EXAMINING TEAM'S PROPOSED EXPLORATION PROGRAM

The applicant's proposed program does not include a sufficient area, nor does it extend far enough southward to include the more southerly direction of the favorable zone as exposed in the westernmost part of the mine workings. The holes and the fence lines are too close together for the expected size of the target area.

An alternate exploration program was discussed with the applicant's representative, Mr. E. E. Eddy, who in general agreed with the alternate exploration program. This alternate exploration program consisting of a total of 43 drill holes drilled by a combination of plug-bit and coring methods and drilled in three stages is recommended.

Stage I of the alternate exploration program would consist of 3 fences of 6 holes each (total, 18 holes) drilled to determine if the favorable sedimentary environment extends an appreciable distance west and southwest from the present mine workings. The fences are 300 feet apart and start 200 feet west of the present workings. Holes along the fence line would be drilled on 125-foot centers. Figure 2 shows the location of drill holes of Stage I of the alternate proposal. The position of holes along a fence line could be changed, with the consent of the Government, if the results obtained from previously drilled holes indicated that the change was warranted, that is, a fence line could be cut off at the north and the holes used to extend the fence toward the south. If previous drilling warrants, holes may be omitted. The position of the fence lines can not be changed nor can a fence be omitted. All

holes would be drilled by plug-bit to the Monitor Butte-Shinarump contact and then cored to bottom 5-10 feet below the Shinarump-Moenkopi contact. Both of these contacts in this area should be readily recognized by drill cuttings.

Stage II holes would be drilled on 125-foot centers along fence lines that are parallel to and 150 feet from the fence lines of Stage I. Two, three, or four fences consisting of a total of about 12 holes would be drilled. Stage II holes would be drilled by plug-bit to the Monitor Butte-Shinarump contact and cored to bottom from 5-10 feet below the Shinarump-Moenkopi contact.

The remaining 13 holes, would be used in Stage III. These holes would be drilled by plug-bit to 5-10 feet below the Shinarump-Moenkopi contact, offsetting favorable holes of Stages I and II on offsets of not less than 75 feet from any previously drilled holes.

Holes of all three stages would average about 230 feet in depth. Holes that are cored would average about 30 feet of core per hole. All holes are to be radiometrically and lithologically logged and all mineralized core will be split and assayed chemically for U_3O_8. No holes will be drilled closer than 100 feet to the boundary of the land subordinated under the program.

ESTIMATED COST OF PROJECT

Cost estimates for the proposed program follow:

Stage I (18 holes)

Independent Contracts

3,600 ft. non-core drilling at $1.35/ft.	$4,860.00	
540 ft. NX core drilling at $3.75/ft.	2,025.00	
4,140 ft. radiometric logging at $0.05/ft.	207.00	
20 core boxes at $5.00/ea.	100.00	
40 hrs. bulldozing at $10.00/hr. (D-7 or equivalent)	400.00	
Total independent contracts		$7,592.00

Labor and supervisio

Engineer-supervisor 2 months at $550/mo.	$1,100.00

Operating materials and supplies

None

Operating equipment

None

Rehabilitation and repairs

None

New Buildings, improvements, installations

None

Miscellaneous

Bookkeeping 2 mo. at $50/mo.	$ 100.00	
Workman's compensation and liab. ins. and payroll taxes $1200 at 9.4%	112.80	
Total miscellaneous		$ 212.80

Estimated cost of Stage I	$8,904.80
Estimated cost per foot (4,140 ft of drilling)	$ 2.15
20 chemical analyses for U_3O_8 at $3.50 each	$ 70.00
Total estimated cost for Stage I	$8,974.80

Stage II (12 holes)

Independent Contracts

2,400 ft. non-core drilling at $1.35/ft.	$3,240.00	
360 ft. core drilling at $3.75/ft.	1,350.00	
2,760 ft. radiometric logging at $0.05/ft.	138.00	
14 core boxes at $5.00/ea.	70.00	
20 hrs. bulldozing at $10.00/hr.	200.00	
Total independent contracts		$4,998.00

Labor and supervision

Engineer-Supervisor 1½ months at $550/mo.	$ 825.00

Operating materials and supplies

None

Operating equipment

None

Rehabilitation and repairs

None

New buildings, improvements, installations

None

Miscellaneous

Bookkeeping 1¼ months at $50/mo.	$ 62.50	
Workman's compensation and liab. ins. and payroll taxes $887.50 at 9.4 %	83.43	
Total miscellaneous		$ 145.93

Estimated cost of Stage II	$5,968.93
Estimated cost per foot (2,760 ft of drilling)	$ 2.16
14 chemical analyses at $3.50/ea.	$ 49.00
Total estimated cost of Stage II	$6,017.93

Stage III (13 holes)

Independent Contracts

2,990 ft. non-core drilling at $1.35/ft.	$4,036.50	
2,990 ft. radiometric logging at $0.05/ft.	149.50	
20 hrs. bulldozing at $10.00/hr.	200.00	
Total independent contracts		$4,386.00

Labor and supervision

Engineer-Supervisor 1½ mo. at $550/mo.	$ 825.00

Operating material and supplies

None

Operating equipment

None

Rehabilitation and repairs

None

New buildings, improvements, installations

None

Miscellaneous

Bookkeeping 1½ mo. at $50/mo.	$ 75.00	
Workmen's compensation, liab. ins. and payroll taxes 9.4% of $900.00	84.60	
Total miscellaneous		$ 159.60

Estimated cost of Stage III	$5,370.60
Estimated cost per foot (2,990 ft. of drilling)	$ 1.80
15 chemical analyses for U_3O_8 at $3.50 each	$ 52.50
Total estimated cost of Stage III	$5,423.10
Total estimated cost of project	$20,415.83
Government participation, 75 percent	$15,311.87

CONCLUSIONS AND RECOMMENDATIONS

The examining team believes that there is a good chance that another ore body in the 10,000 ton class may exist to the west along the strike of the present lense and they recommend that the program of exploration outlined above be approved. A short form contract is recommended.

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
AUGUST 1957
DOCKET 4756

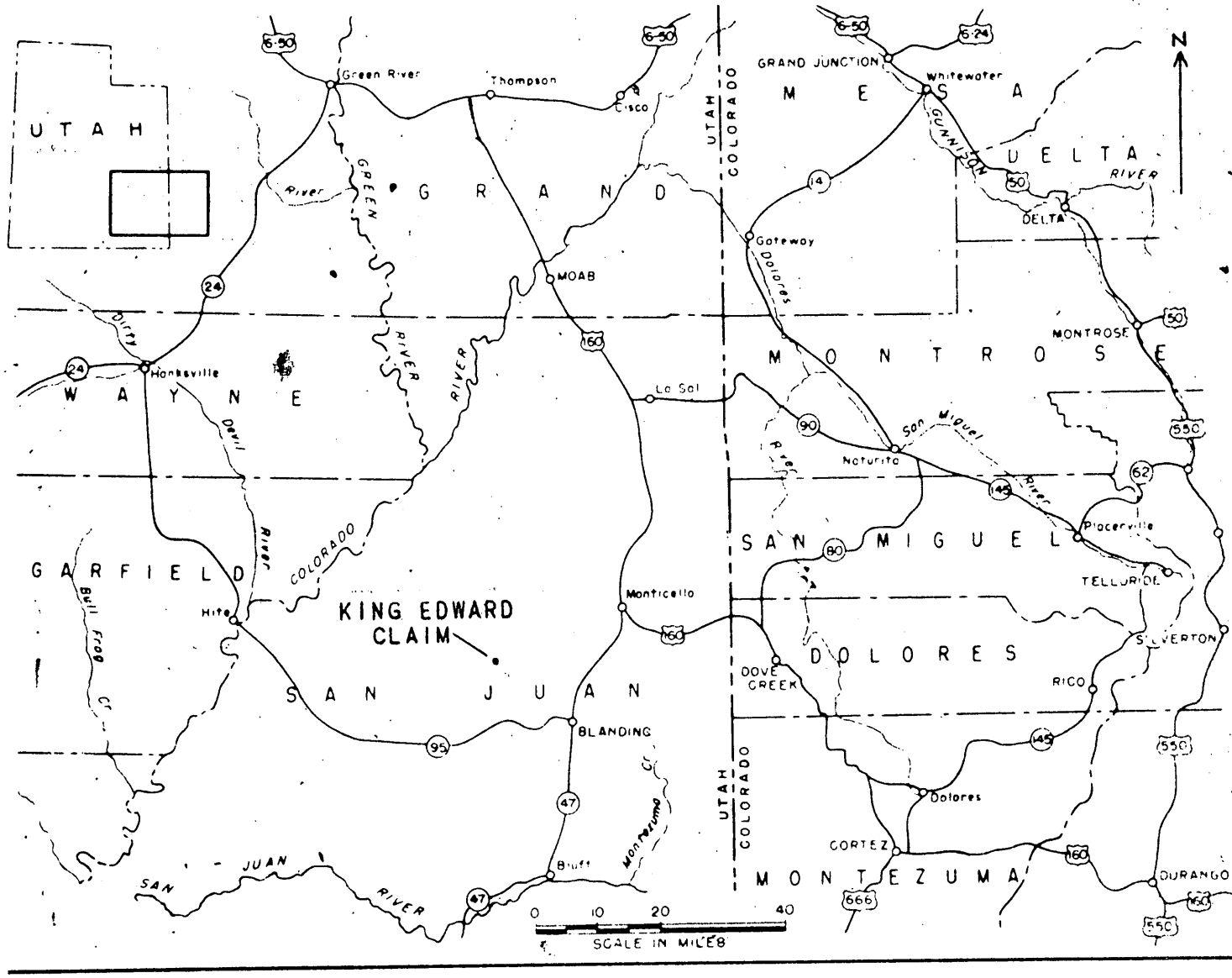
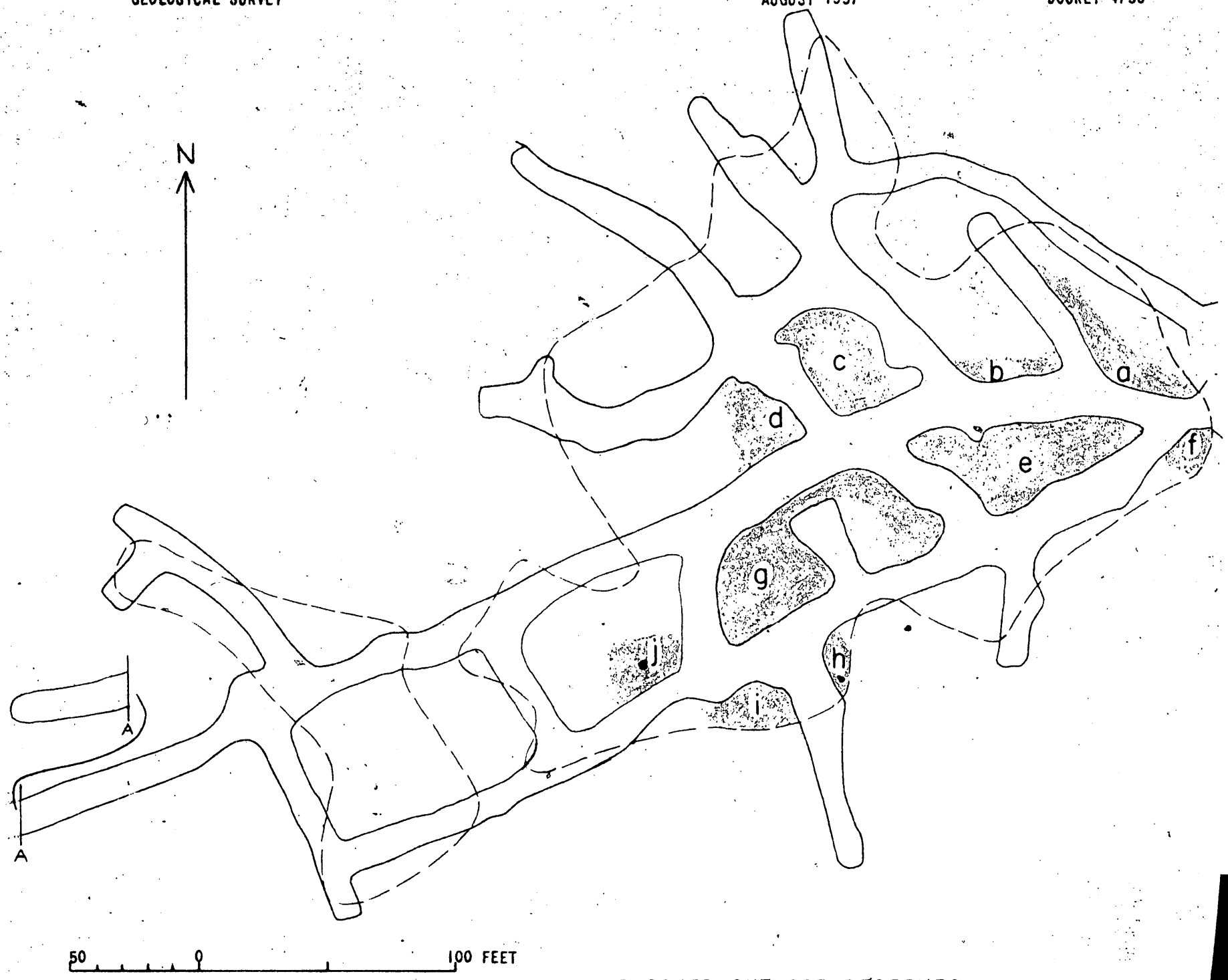


FIGURE 1.—INDEX MAP OF PART OF THE COLORADO PLATEAU REGION SHOWING THE LOCATION OF THE KING EDWARD CLAIM, SUNSHINE MINING COMPANY, SAN JUAN COUNTY, UTAH.



EXPLANATION

UNDERGROUND WORKINGS

C ORE BLOCK

APPROXIMATE LIMIT OF MINERALIZATION

Note: Map and table compiled from material furnished by applicant.

BLOCKED-OUT ORE RESERVES

BLOCK	AREA IN FEET^2	THICKNESS IN FEET	VOLUME IN FEET^3	*TONS ORE	%U_3O_8
a	702	4.5	3,159	243	0.27
b	336	8.0	2,688	207	0.20
c	1,140	5.8	6,612	508	0.63
d	724	3.8	2,751	212	0.53
e	1,805	6.0	10,830	833	0.57
f	192	6.5	1,248	96	0.32
g	1,874	5.3	9,932	764	0.39
h	144	4.0	576	44	0.32
i	464	3.8	1,763	136	0.36
j	627	6.5	4,075	313	0.22
TOTAL	8,008		43,635	3,356	
weighted average		5.4			0.44

*Using 13 feet^3/ton ore inplace
Total of 29,500 pounds U_3O_8

Figure 4.--OUTLINE MAP OF UNDERGROUND WORKINGS OF THE RANSOM MINE SHOWING BLOCKED OUT ORE RESERVES AND APPROXIMATE LIMITS OF MINERALIZATION, KING EDWARD CLAIM, SUNSHINE MINING COMPANY, SAN JUAN COUNTY, UTAH.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 28 1957

DATE		CODE
6/28	C	220
"	FLK	700

224 New Customhouse
Denver 2, Colorado

June 26, 1957

Memorandum

To: J. W. Hasler w/enclosures, Items 2-4 below
DMEA/G. Jet. w/enclosures, Items 1-5 below

From: DMEA Field Team, Region III

Subject: Docket DMEA-4756 (Uranium) Sunshine Mining Company, (King Edward claim), San Juan County, Utah

Enclosed is the following material relating to the subject docket:

1. Copy of application for Government assistance in exploration work under the DMEA program.

2. Memorandum of Review by James Pacos, USBM.

3. Memorandum of Review by N. E. Nelson, USGS.

4. Letter of transmittal of the foregoing to this office, dated June 20, 1957, from the Chairman, Operating Committee, DMEA.

5. Routing Control Sheet.

A field examination of the property and a joint report of findings and recommendations pertaining to the Applicant's work proposal are requested.

If the field examiners view the project proposal favorably, they are to note the listed comments mentioned in the Chairman's letter and inform the Applicant accordingly.

Twelve extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries, should be submitted if Government participation is recommended.

The Bureau of Mines' copy of the application should not be returned to this office, but is to be kept for the Examining Engineer's file. The Routing Control Sheet, however, is to be completed, detached from the application, and forwarded to the Executive Officer with the Joint Examination Report. The Survey's copy of the application is to be returned to Mr. Harshman's office.

Original signed by
W. H. KING

W. H. King
Executive Officer

Enclosures

MEM:jy

cc: Sec. Op. Comm. (2)
Harshman w/enclosures, Items 2-5
DMMA/MPC
Docket 4756
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/17	Knopp	700
"	[illegible]	700
6/19	[illegible]	130
"	Johnson	110
		~~110~~
20	Matthews	100
6/20	[illegible]	220
		700

JUN 20 1957

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4756 (Uranium)
Sunshine Mining Company
King Edward Claim
San Juan County, Utah

Dear Mr. King:

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

Enclosed are copies of memoranda, dated June 12, 1957, from N. E. Nelson, USGS, and James Paone, USBM, relating to the proposed project. Also enclosed is an extra copy of the application for the use of the Field Team.

If the Field Team recommends an exploration project, we will require, in addition to the usual information, the following:

1. A Consent to Lien and Subordination Agreement executed by (a) Sunshine Consolidated, Inc., (b) Clayton Silver Mines, and (c) Silver Syndicate, Inc.

2. Since exploration of the King Edward claim would furnish valuable information in the exploration of the adjacent property, any adjacent claims controlled by "Sunshine" should be included in the application. The claim names, recording data, and ownership evidence should be supplied by the Applicant. If not owned by Sunshine, it should be requested to furnish leases or other documents showing how the property is controlled, together with Consent to Lien and Subordination Agreement forms signed by the landowners.

Enclosures

Sincerely yours,

Frank D. Lamb
Member, Bureau of Mines (JLB)

George C. Selfridge
Chairman, Operating Committee (JLB)

N. E. Nelson
Member, Geological Survey (JLB)

THKillsgaard, Rm. 5224
Code 700, Mr. Knouse

FEKnouse/gla
6-17-57
cc to: Admr.'s Reading File
Operating Committee

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/17	Kuggar	700
"	Ellis	700
6/19	Schroeder	130
6/19	Lamb	130
6/19	Nelson	130
"	Johnson	110
70	Mistendorf	100
		220
		700

JUN 20 1957

Mr. E. E. Eddy, Manager
Sunshine Mining Company
Post Office Box 474
Blanding, Utah

Re: Docket No. DMEA-4756 (Uranium)
King Edward Claim
San Juan County, Utah

Dear Mr. Eddy:

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

William H. King,
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

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

Sincerely yours,

C. O. Mistendorf (for)

Administrator

FLKnouse/gla
6-17-47
cc to: Admr.'s Reading File
Code 700, Mr. Knouse
DMEA Field Team, Region III (2)

8623

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 13 1957

DATE	INITIALS	CODE
6/13	JWS	220
"	Ellis	700
	Finouse	
Comments		
Complete		

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

June 12, 1957

Re: DMEA 4756
Sunshine Mining Company
Ransom Mine
San Juan Co., Utah
$16,176 - Uranium

Memorandum

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

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

Subject: Review of application.

The applicant requests assistance in testing by core and non-core drilling an area classed as prospective as a result of a radon survey.

The area is 700 feet west of the Ransom mine, which has produced 8,500 tons of 0.27% U_3O_8 ore from an elliptical orebody in the Shinarump conglomerate. Reserves were estimated to be 3,779 tons @ 0.39% U_3O_8, diluted to a 6-foot minimum valued at $128,675 as of Jan. 24, 1957. The deposit is not related to a channel, but the Shinarump is thickened over the orebody and immediate area.

Drilling indicates the Ransom orebody does not extend into the area rated anomalous.

Justification of the request for assistance rests largely on an evaluation of the radon survey data. Referral of the application to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY
D M E A
RECEIVED JUN 13 1957

DATE	INITIALS	CODE
6/13	JWE	220
6/13	Ellis	200
	Knowse	

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

Date June 12, 1957

DMEA Project No. 4756
DMEA Contract No.
Commodity Uranium
Name of applicant Sunshine Mining Corporation
Name of property King Edward Claim
Location of property San Juan County, Utah
Estimated cost of project $16,176.00

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee
From: James Paone, Bureau of Mines Member JP
Uranium Commodity Committee
Type of review: Application
(Application, Field Exam Report, etc.)

1. Date of report document: 6/4/57 2. Date received by reviewer: 6/11/57

3. Is report on this property known to reviewer: Yes ☐ No ☐

4. Data or reports 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. Explain items marked yes above:

8. Matters needing special 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 Exam [x]
c. Denial ☐
d. Agree with Field Exam ☐
e. Disagree with Field Exam ☐
f. Suggest alternate plan ☐
g. Request another examination ☐
h. Approval ☐
i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary) Drilling costs appear to be high.

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

June 7, 1957

Sunshine Mining Company,
Box 474,
Blanding, Utah

Subject: DMEA 4756

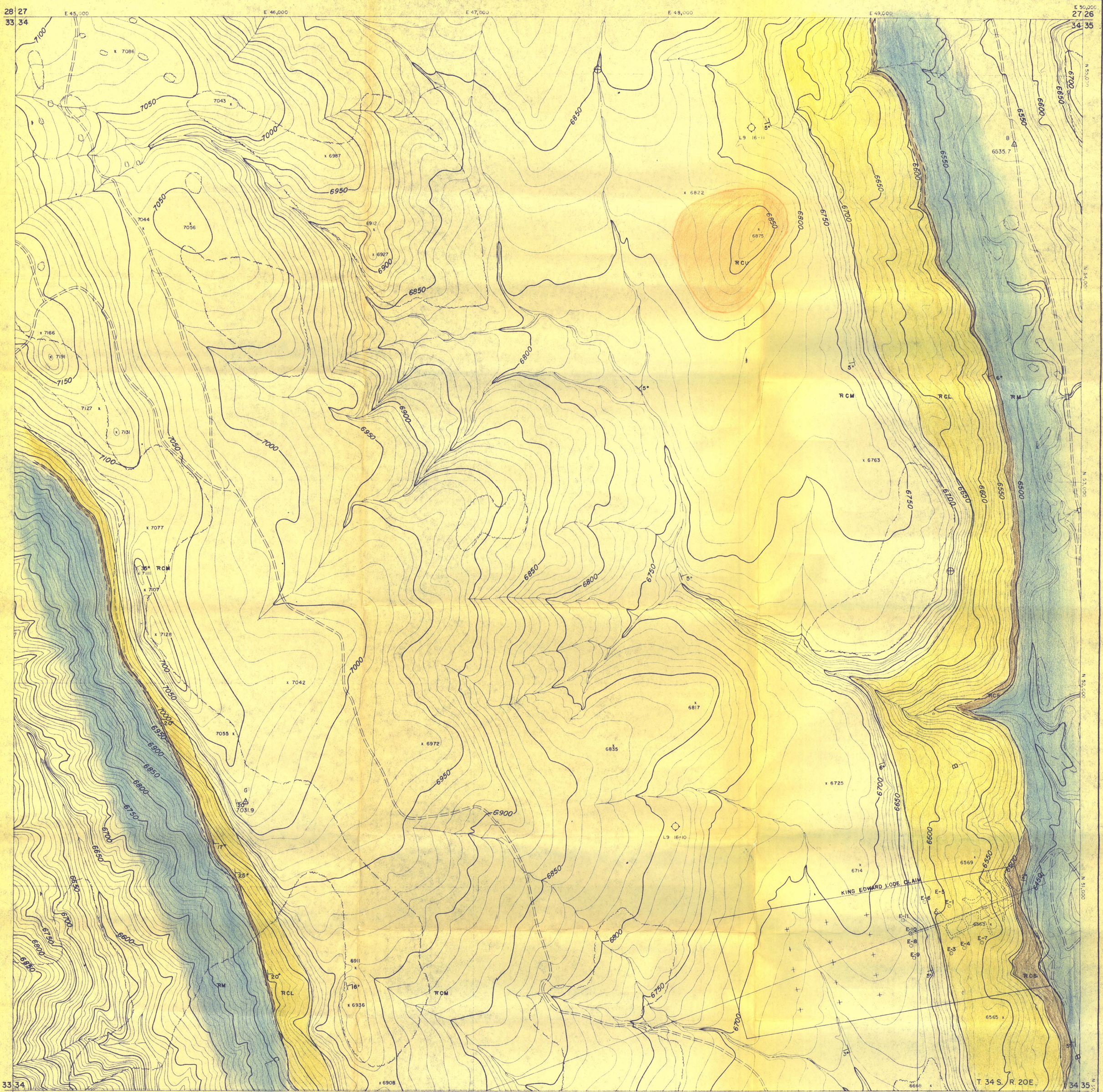
Gentlemen:

Your application for exploration assistance, dated May 25, 1957, submitted to our office at Denver, Colorado, has been assigned Docket Number DMEA 4756 and referred to the Rare and Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to: Region III



- EXISTING DRILL HOLE
- PROPOSED DRILL HOLE, STAGE I
- HORIZONTAL BEDDING
- STRIKE AND DIP OF BEDDING
- AERIAL PHOTO REFERENCE

SUNSHINE MINING COMPANY

RANSOM MINE

SAN JUAN COUNTY, UTAH

SECTION 34, T. 34 S. R. 20 E

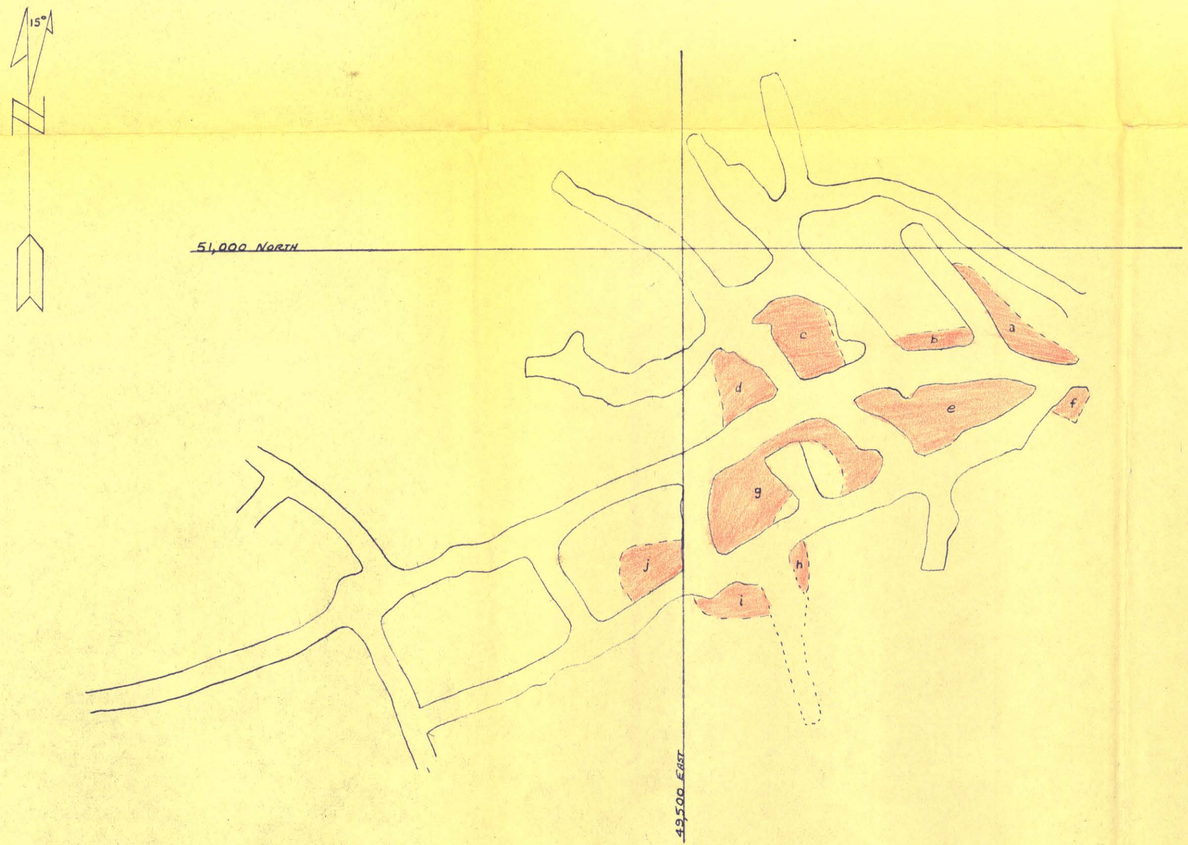
GEOLOGIC MAP TO ACCOMPANY
AN APPLICATION FOR DMEA LOAN
KING EDWARD LODE CLAIM

Scale: 1 inch = 200 feet Contour Interval: 10 feet Datum Mean Sea Level
Magnetic Declination 15 Degrees East

APRIL 25, 1957 D.N.F.

RCU	CHINLE FORMATION UPPER SHALE MEMBER
RCM	CHINLE FORMATION MOSS BACK MEMBER
RCL	CHINLE FORMATION LOWER SHALE MEMBER
RCS	CHINLE FORMATION SHINARUMP MEMBER
RM	MOENKOPI FORMATION

Photogammetry by Aerial Mapping Co. of Idaho Inc.



IN PLACE RESERVES:

BLOCK	AREA SQUARE FEET	THICKNESS FEET	TONNAGE	GRADE PER CENT U_3O_8	TONNAGE X GRADE	AREA X THICKNESS
a	702	4.5	243	0.27	66	31,590
b	336	8.0	207	0.20	41	26,880
c	1,140	5.8	508	0.63	320	66,120
d	724	3.8	212	0.53	112	27,512
e	1,805	6.0	833	0.57	475	108,300
f	192	6.5	96	0.32	31	12,480
g	1,874	5.3	764	0.39	298	99,322
h	144	4.0	44	0.32	14	5,760
i	464	3.8	136	0.36	49	17,632
j	627	6.5	313	0.22	69	40,755
TOTAL	8,008		3,356		1,475	436,351
AVERAGE		5.4		0.44		

VALUE IN PLACE

GRADE PERCENT U_3O_8	VALUE PER TON	GROSS VALUE	
0.44	$38.80	$130,213	
0.39	34.05	128,675	

IN PLACE RESERVES DILUTED TO 6 FOOT MINIMUM

a	702	6.0	324			42,120
b	336	8.0	207			26,880
c	1,140	6.0	526			68,400
d	724	6.0	334			43,440
e	1,805	6.0	833			108,300
f	192	6.5	96			12,480
g	1,874	6.0	865			112,440
h	144	6.0	67			8,640
i	464	6.0	214			27,840
j	627	6.5	313			40,755
TOTAL	8,008		3,779		1,475	491,295
AVERAGE		6.1		0.39		

VOLUME FACTOR = 13 CUBIC FEET PER TON

TOTAL U_3O_8 CONTENT = 29,500 POUNDS

SUNSHINE MINING CO.
RANSOM MINE

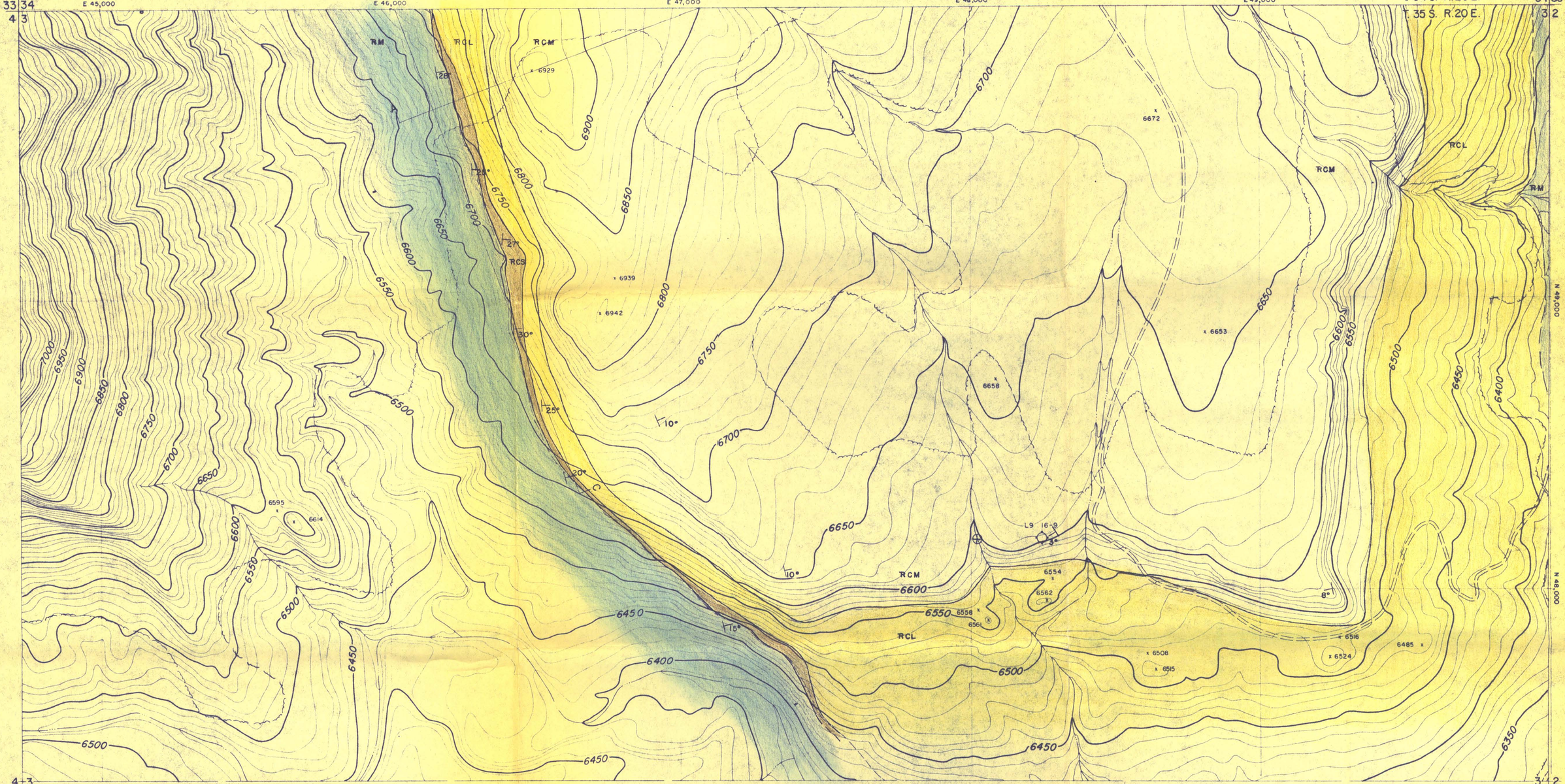
KING EDWARD BLOCKED OUT ORE RESERVES

ORE BLOCKS DESIGNATED BY DRIFT AND CROSSCUT OUTLINE, DASHED LINE AND LOWER CASE LETTERS

Scale: 1 inch = 50 feet

January 24, 1957

D.M. FERGUSON



SUNSHINE MINING COMPANY

RANSOM MINE

SAN JUAN COUNTY, UTAH

SECTION 3, T. 35 S. R. 20 E.

GEOLOGIC MAP TO ACCOMPANY
AN APPLICATION FOR D.M.E.A. LOAN
KING EDWARD LODE CLAIM

Scale: 1 inch = 200 feet Contour Interval: 10 feet Datum Mean Sea Level
Magnetic Declination 15 Degrees East

APRIL 25, 1957 D.N.F.

⊕ HORIZONTAL BEDDING

20° STRIKE AND DIP OF BEDDING

AERIAL PHOTO REFERENCE

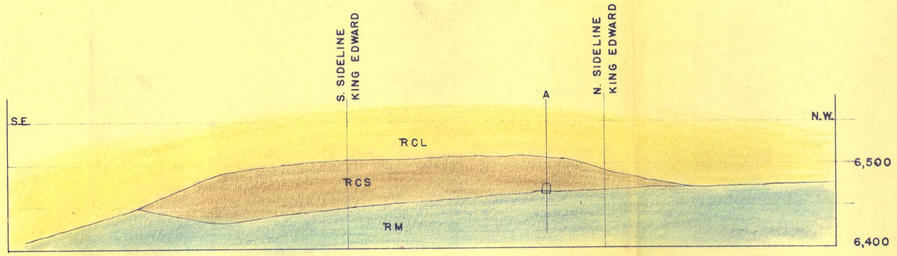
RCM — CHINLE FORMATION MOSS BACK MEMBER

RCL — CHINLE FORMATION LOWER SHALE MEMBER

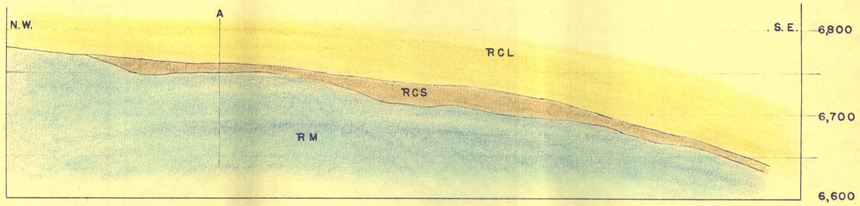
RCS — CHINLE FORMATION SHINARUMP MEMBER

RM — MOENKOPI FORMATION

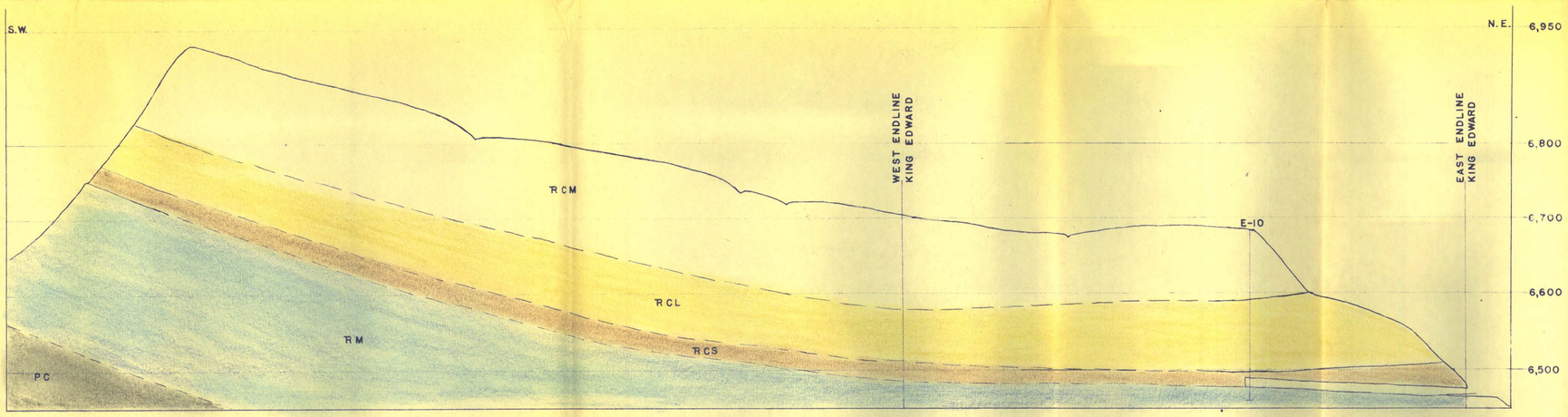
Photogammetry by Aerial Mapping Co of Idaho Inc.



SECTION B-B
PLANE OF SECTION N. 20° W.



SECTION C-C
PLANE OF SECTION N. 20° W.



SECTION A-A
PLANE OF SECTION N. 70° E.

LEGEND

RCM	CHINLE FORMATION MOSS BACK MEMBER
RCL	CHINLE FORMATION LOWER SHALE MEMBER
RCS	CHINLE FORMATION SHINARUMP MEMBER
RM	MOENKOPI FORMATION
PC	CUTLER FORMATION

SUNSHINE MINING COMPANY
RANSOM MINE

UPPER COTTONWOOD WASH
SAN JUAN COUNTY, UTAH

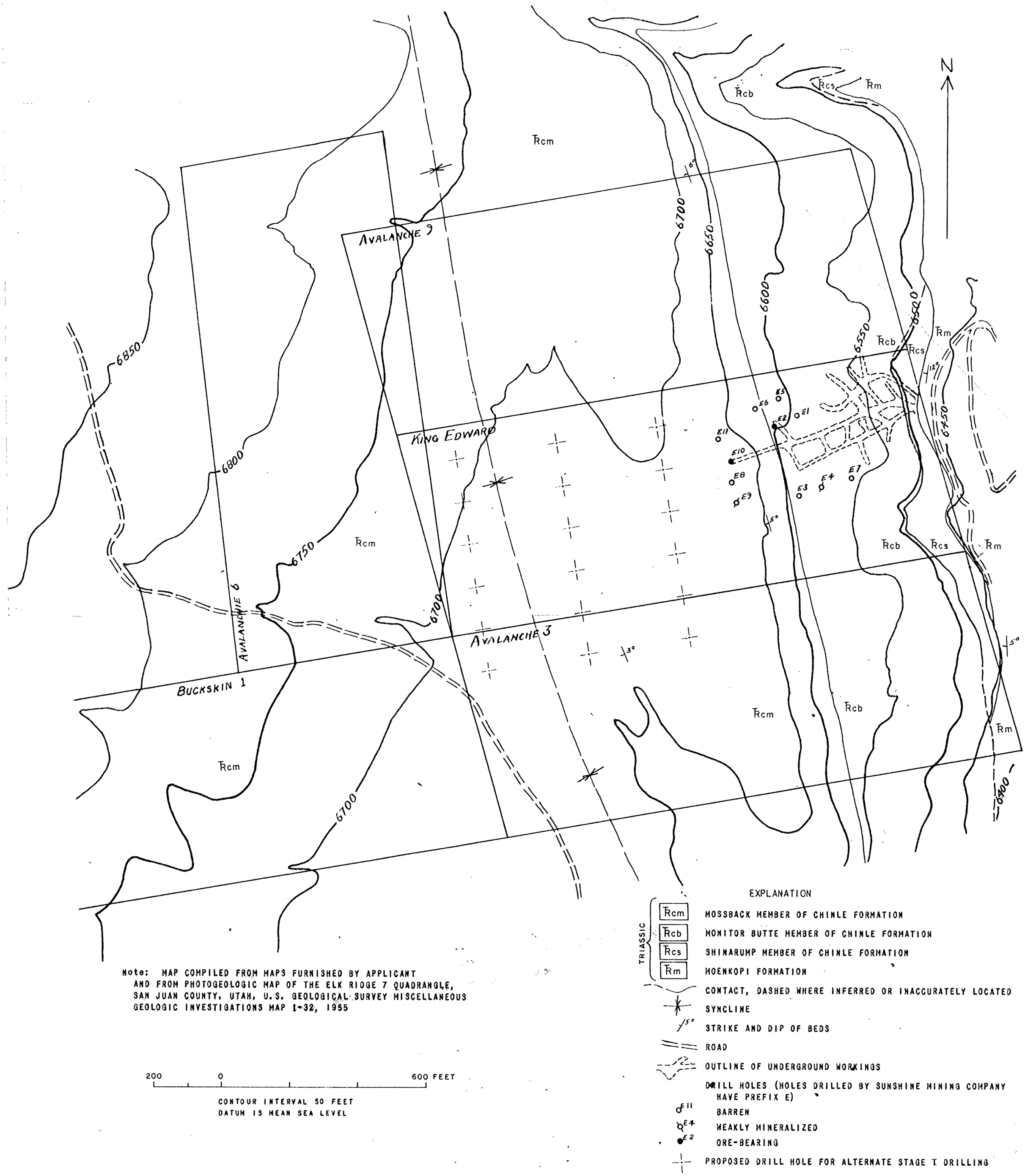
GEOLOGIC SECTIONS TO ACCOMPANY
AN APPLICATION FOR D.M.E.A. LOAN
KING EDWARD LODE CLAIM

SCALES
HORIZONTAL: 1 INCH = 200 FEET
VERTICAL: 1 INCH = 100 FEET

APRIL 25, 1957

D.N.F.

16 15
21 22
15 14
22 23
65,840 N.
60,560 N.
55,280 N.
50,000 N.
28 27
33 34
33 34
4 3
TOWNSHIP 34 SOUTH
TOWNSHIP 35 SOUTH
44,720 E.
50,000 E.
RANGE 20 EAST, S.L.M.
15°
SURVEYED CLAIMS
UNSURVEYED CLAIMS
APEX 15
APEX 16
APEX 17
APEX 18
APEX 19
APEX 20
APEX 21
APEX 22
APEX 23
APEX 14
APEX 6
APEX 7
APEX 8
APEX 9
APEX 10
APEX 11
APEX 12
APEX 13
TERRY
JANET
DALE
APEX 5
APEX 4
APEX 3
APEX 2
APEX 1
SUMMIT 5
BONNY
VIRGE
LEROY
SUMMIT 3
SUMMIT 2
SUMMIT 1
SUMMIT 4
AVALANCHIE 8
AVALANCHIE
AVALANCHIE 10
AVALANCHIE 15
IMOGENE
KING JAMES
VIRGENE
VALE 19
VALE 18
VALE 17
VALE 16
BLACK BEAR
AVALANCHIE 13
AVALANCHIE 1
AVALANCHIE 12
AVALANCHIE 17
AVALANCHIE 16
AVALANCHIE 24
AVALANCHIE 19
AVALANCHIE 20
BUCKSKIN 10
DUTCHESS 3
DUTCHESS 2
DUTCHESS
CROWN 3
CROWN 2
CROWN 1
DUKE 3
DUKE 2
DUKE 1
MARCUS 6
MARCUS 7
MARCUS 4
MARCUS 5
MARCUS 2
MARCUS 3
MARCUS 1
AVALANCHIE 2
KING ARTHUR
KING GEORGE
ZERO 3
VALE 15
VALE 14
VALE 13
VALE 12
VALE 11
VALE 10
VALE 9
VALE 8
VALE 7
VALE 6
VALE 5
VALE 4
VALE 3
VALE 2
VALE 1
MONARCH 8
MONARCH 7
MONARCH 6
MONARCH 5
MONARCH 4
MONARCH 3
MONARCH 2
MONARCH 1
SULTAN 9
SULTAN 8
SULTAN 7
SULTAN 6
SULTAN 5
SULTAN 4
SULTAN 3
SULTAN 2
SULTAN 1
ACE 22
ACE 21
ACE 20
ACE 19
ACE 18
ACE 17
ACE 16
ACE 15
ZERO 2
ACE 14
ZERO 1
ACE 13
MOGUL 1
ACE 12
MOGUL 2
ACE 11
MOGUL 3
ACE 10
MOGUL 4
ACE 9
MOGUL 5
ACE 8
MOGUL 6
ACE 7
MOGUL 7
ACE 6
MOGUL 8
ACE 5
AVALANCHE 14
ACE 4
AVALANCHE 7
ACE 3
AVALANCHE 4
ACE 2
AVALANCHE 11
ACE 1
AVALANCHE 18
EL PORTAL
AVALANCHE 25
AVALANCHE 3
KING EDWARD
AVALANCHIE 6
AVALANCHIE 5
AVALANCHE 9
AJAX 1
AJAX 2
AJAX 3
AJAX 4
AJAX 5
AJAX 6
AJAX 7
BUCKSKIN 1
BUCKSKIN 0
BUCKSKIN 2
BUCKSKIN 3
BUCKSKIN 4
BUCKSKIN 5
BUCKSKIN 6
BUCKSKIN 7
BUCKSKIN 8
BUCKSKIN 9
SUNSHINE MINING COMPANY
RANSOM MINE
UPPER COTTONWOOD WASH
SAN JUAN COUNTY, UTAH
CLAIM MAP TO ACCOMPANY
AN APPLICATION FOR D.M.E.A. LOAN
KING EDWARD LODE CLAIM
SCALE: 1 INCH = 600 FEET
APRIL 25, 1957
D.N.F.
R. 20 E



Note: MAP COMPILED FROM MAPS FURNISHED BY APPLICANT AND FROM PHOTOGEOLOGIC MAP OF THE ELK RIDGE 7 QUADRANGLE, SAN JUAN COUNTY, UTAH, U.S. GEOLOGICAL SURVEY MISCELLANEOUS GEOLOGIC INVESTIGATIONS MAP I-32, 1955

FIGURE 2.--GEOLOGIC MAP OF THE KING EDWARD CLAIM AND VICINITY SHOWING LOCATION ALTERNATE PROPOSED STAGE I DRILL HOLES, SUNSHINE MINING COMPANY, SAN JUAN COUNTY, UTAH.

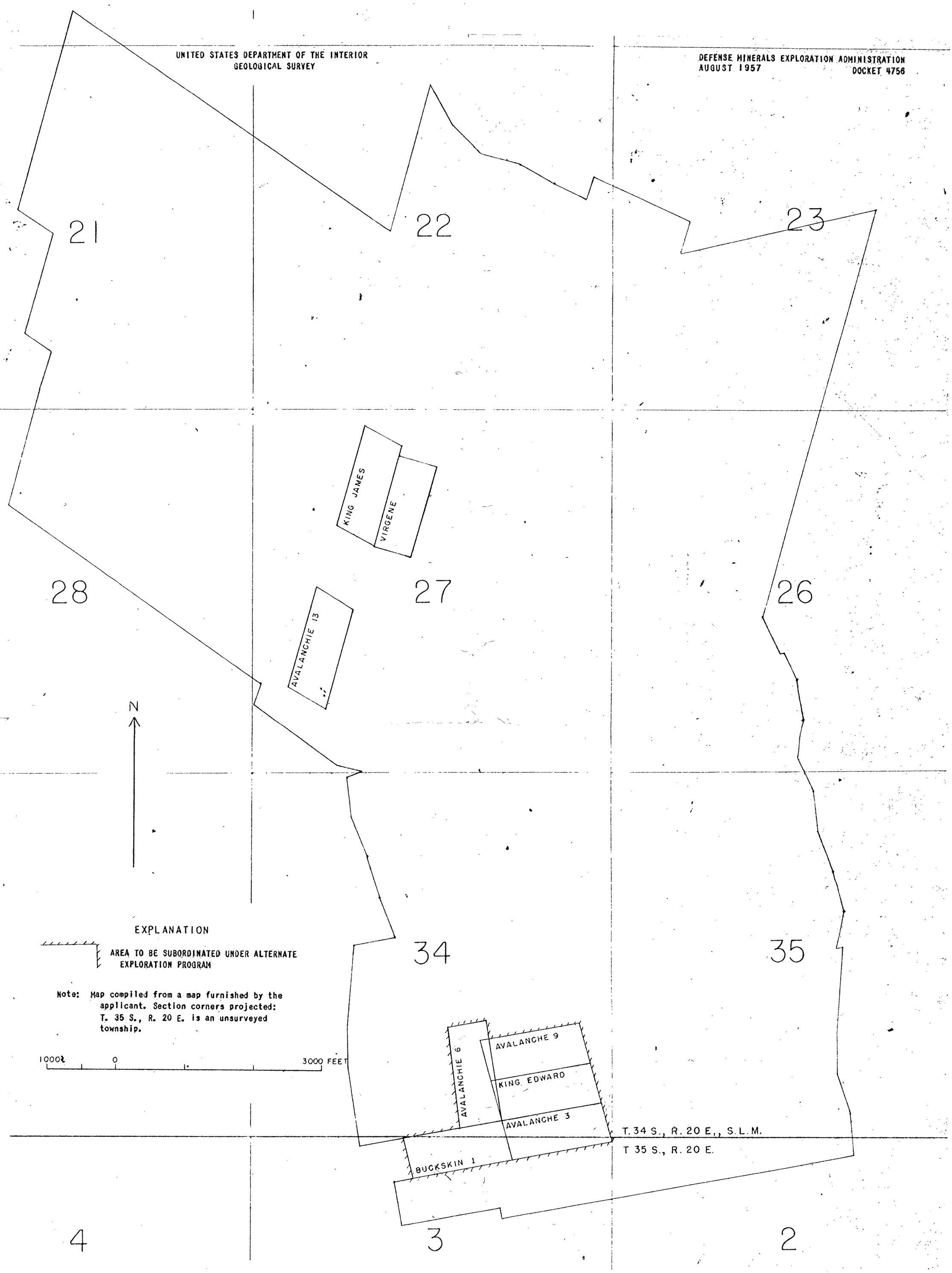


FIGURE 3.--OUTLINE MAP OF SUNSHINE MINING COMPANY PROPERTY SHOWING THE AREAL RELATIONSHIP OF THE AREA OF KING EDWARD CLAIM AND THE OTHER CLAIMS OF THE PROPERTY THAT HAVE PRODUCED URANIUM, KING EDWARD CLAIM, SUNSHINE MINING COMPANY, SAN JUAN COUNTY, UTAH.