DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 1636-X

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as an exploration application

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

To:	P.E.Div.	Date	6/27/51
To:	to defense production	Date	1/11-52
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INT.-DUP. SEC., WASH., D.C. 98868

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : R. E. Adams, Administrative Officer, DMEA
Attention: Docket & Control Branch

DATE: June 12, 1952

FROM : Iron and Ferro-Alloy Division, DMEA

SUBJECT: Removal of docket from active file
Docket No. DMA 1636X - Tungsten
Surcease Mining Company
San Bernardino County, California

At the applicant's request, the above-noted application has been withdrawn. We are transmitting herewith the docket for your files.

G. C. Selfridge

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

Attachment

FILE COPY
SURNAME:

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

June 12, 1952

Selfridge

R. E. Adams, Administrative Officer, DMEA
Attention: Docket & Control Branch
Iron and Ferro-Alloy Division, DMEA

Removal of docket from active file
Docket No. DMA 1636X - Tungsten
Sunsome Mining Company
San Bernardino County, California

At the applicant's request, the above-noted application has been withdrawn. We are transmitting herewith the docket for your files.

George C. Selfridge
G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

Attachment

LMcClure

cc: Admn. Reading File
Docket
G. C. Selfridge

OPERATIONS ADDRESS:
P. O. Box 27
RED MOUNTAIN, CALIF.
Phone—Randsburg 5661

K. MALONE, Manager
D. A. MOYER, Asst. Manager

SURCEASE MINING COMPANY

ATOLIA SCHEELITE PROPERTIES

BUSINESS OFFICE:
214 - 30th Street
SACRAMENTO 16, CALIF.
Phone—GIlbert 3-8593

J. W. HOEFLING, President
J. B. GEE, Secretary

June 6, 1952

Mr. C. O. Mittendorf
Defense Minerals Exploration
Department of Interior
Washington 25, DC

Re: Docket No. DMA 1636X, Tungsten
San Bernardino County, Calif.

Dear sir:

In response to your checking inquiry of May 29 we feel that it would be best to withdraw this application. As you point out, this application on file would probably not effect any real saving of time over filing of a new one.

Thanking you for your consideration in the matter, we are,

Very truly yours,

SURCEASE MINING CO.

by J W Hoefling
President

JWH/jbg

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 10 1952

FILE COPY
SURNAME:

Selfridge

EXPLORATION

Mr. J.W. Hoefling, President
Surcease Mining Company
214 30th Street
Sacramento, California

Re: Docket No. DMA 1636X - Tungst-
Lode and placer claims - Atolia
Mining District
San Bernardino County, California

Dear Mr. Hoefling:

Recently we reviewed the subject docket and noted that your application for exploration assistance on the above-noted claims was dated May 30, 1951. We would like to clear all of the old DMA applications from our active files.

On October 31, 1951, you wrote us that further studies were being made concerning an exploration program in stages. On March 7, 1952, in response to our letter of February 29, 1952, you wrote us that your exploration plans had not crystallized to a point to permit an intelligent decision and asked that your application be held in abeyance until further notice. On March 13, 1952, we answered you and stated that we hoped to hear from you in the near future. Almost another three months have passed.

As your application is now a year old and you still have no definite plan for exploration, we suggest that you either request that the application be withdrawn or submit the information requested from you last year. In case that you would file a new application, I can assure you that no time would be lost in its processing.

We wish to cooperate with you in the matter of allowing ample time, but if the needed information has not been received by June 30, 1952, we will then remove the application from the active file and consider the matter closed.

Sincerely yours,

E. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

GCSelfridge:ls 5/28/52

Copy to: Docket
Admn. Reading File
Field Team, Reg. 3
G. C. Selfridge
R. W. Gebhan, USBM
D. M. Lemmon, USGS

FILE COPY
SURNAME:

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

Selfridge

MAR 13 1952

Mr. J. W. Hoefling, President
Surcease Mining Company
214 30th Street
Sacramento, California

Re: Docket No. DMA 1636X - Tungsten
Lode and placer claims
Atolia Mining District
San Bernardino County, California

Dear Mr. Hoefling:

Thank you for your letter of March 10, 1952, in which you inform us of your desire that your application be held in abeyance until further notice. We shall do this and hope that we may hear from you in the near future.

Sincerely yours,

C. O. Mittenderf

Acting Administrator
Defense Minerals Exploration
Administration

A.N.
3-13-52

GCSelfridge:ls
3/11/52

cc: Admn. Reading File
Docket
Field Team, Region 3
R. W. Geehan, USBM
D. M. Lemmon, USGS
G. C. Selfridge

SURCEASE MINING COMPANY
214 30TH STREET PHONE GILBERT 3-8593
SACRAMENTO 16, CALIFORNIA

March 7, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

Mr. G. C. Selfridge, Chief
Iron & Ferro-Alloy Division
Defense Minerals Administration
Department of Interior
Washington 25, DC

Re: Docket No. DMA 1636X-Tungsten

Dear Mr. Selfridge:

In answer to your inquiry of Feb. 29th re the above application:

Developments in our exploration plans have not yet crystallized to point pf permitting an intelligent decision on just how government participation would fit into them most practically. Our potentials cover a broad area and are subject to a wide range of approaches. Hence we are proceeding with preliminary steps ourselves for the time being.

Would therefore like to just leave our application in abeyance, if there is no objection to so doing. It would then be relatively simple and quick to re-activate it at any time.

Trusting this is agreeable, we are,

Very truly yours,

SURCEASE MINING CO.

by J. W. Stoffling
President

JWH:jbg
Airmail

cc: Mr. H. C. Miller, Chief
Field Team, Region 3
Flood Bldg., San Francisco

FILE COPY
SURNAME:

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

FEB 29 1952

Mr. J. W. Hoefling
Surcease Mining Company
214 30th Street
Sacramento 16, California

Re: Docket No. DMA 1636X - Tungsten
Lode and Placer Claims
Atolia Mining District
San Bernardino County, California

Dear Mr. Hoefling:

A review of our file of the subject docket shows that under date of October 31, 1951, you advised us by letter that you were considering the possibility of a program by steps or stages and further that you were holding your application in abeyance until it could be set forth more definitely in total plan. Since your letter of October 31, 1951, we have had no further word from you relative to this matter.

Will you please advise us as to the progress of your plans in respect to your application or advise us whether or not you desire to proceed with the application.

Sincerely yours,

George C. Selfridge

cc 2/29

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

GGGentry:ls
2/28/52

cc: Docket
Admn. Reading File
Field Team, Region 3
R. W. Geehan, USBM
D. M. Lemmon, USGS
G. G. Gentry
G. C. Selfridge

SURCEASE MINING COMPANY
214 30TH STREET PHONE GILBERT 3-8593
SACRAMENTO 16, CALIFORNIA

Oct. 31, 1951

Defense Minerals Administration
RECEIVED
NOV 5 1951
DEPARTMENT OF THE INTERIOR
RECEIVED
NOV 1 9 1951
Defense Minerals Administration,
Production Expansion Division.

Dept. of The Interior
Defense Minerals Administration
Minerals Exploration Program Division
Washington 25, DC

Gentlemen:

Re: Docket DMA - 1636

Just a memo of status quo of this application:

As of May 31, 1951, we submitted application for a diamond drilling program.

The application was referred back to us in July for some additional required information, via office of Regional Director, Mr. H. C. Miller, San Francisco.

Meanwhile we have been making further studies of such a program, resulting in an indicated one so far of more comprehensiveness. Further studies are still in progress as to most effectiveness of any such exploration program and necessary follow-up. The possibility of a program by steps or stages is now being explored. Hence we are holding our application in abeyance until it can be set forth more definitely in total plan.

Very truly yours,

SURCEASE MINING CO.

by J. W. Hoefling

JWH: jbg

Recd H. C. Miller additional data and [illegible] July 13, 1951

OFFICIAL FILE COPY

To	Initials	Date
210		

SURCEASE MINING COMPANY
214 30TH STREET PHONE GILBERT 3-8593
SACRAMENTO 16, CALIFORNIA

Aug 25, 1951

Mr. George B. Holderer
Chief, Tungsten Branch
Defence Minerals Administration
Washington 25 D. C.

Dear Mr. Holderer: Ref; DMA 1636

Have yours of the 20th in answer to our questions of the 10th.

Just a note of appreciation for your clean-cut and definite answers to those specific questions.

This concise delineation will be very helpful, not only in completing the application we now have in process but also in its execution and further planning.

Sincerely yours,

SURCEASE MINING CO.

by Jas Toepling

JWH/s Pres.

AUG 29 1 40 PM '51
DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.

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

AUG 20 1951

A. E. C.

Mr. J. . Hoefling, President
Surcease Mining Company
214-30th Street
Sacramento 16, California

In reply please refer to
DMA 1636

Dear Mr. Hoefling:

This is in reply to your letter of August 10, 1951, asking questions in connection with the exploration loan program.

These are answered in the same order as they were asked.

1. The word "exploration" means straight exploration as shown in section 7(a) of Mineral Order 5, copy of which is enclosed. This is for the search for ore only. It must not be confused with "development" which means blocking out ore to prepare it for production.

2. The Government lien would apply only to the specific mining claims included in the project.

3. The pay back royalties are confined to the ore which is discovered as the result of the project.

4. Yes.

5. The lien against the property definitely terminates in ten years.

6. The existence of one project does not prohibit the inauguration of a second project on the same block of ground if, in the opinion of the examining engineers, it is found desirable. If two separate projects are in force, you are correct is assuming a, b, and c.

Very truly yours,

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

Enclosures 2

CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Files

GBHolderer:dgs
August 16, 1951

DMA Docket File

FILE COPY
SURNAME:

Holderer

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

AUG 20 1951

Mr. J. . Roefling, President
Surcsame Mining Company
214-30th Street
Sacramento 16, California

In reply please refer to
DMA 1636

Dear Mr. Roefling:

This is in reply to your letter of August 10, 1951, asking questions in connection with the exploration loan program.

These are answered in the same order as they were asked.

1. The word "exploration" means straight exploration as shown in section 7(a) of Mineral Order 5, copy of which is enclosed. This is for the search for ore only. It must not be confused with "development" which means blocking out ore to prepare it for production.

2. The Government lien would apply only to the specific mining claims included in the project.

3. The pay back royalties are confined to the ore which is discovered as the result of the project.

4. Yes.

5. The lien against the property definitely terminates in ten years.

6. The existence of one project does not prohibit the inauguration of a second project on the same block of ground if, in the opinion of the examining engineers, it is found desirable. If two separate projects are in force, you are correct in assuming a, b, and c.

Very truly yours, 8/20

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

Enclosures 2

CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Files

GBHolderer:dgs
August 16, 1951

August 16, 1951

Mr. J. W. Moefling, President
Surcease Mining Company
214-30th Street
Sacramento 16, California

In reply please refer to
DMA 1636

Dear Mr. Moefling:

This is in reply to your letter of August 10, 1951, asking questions in connection with the exploration loan program.

These are answered in the same order as they were asked.

1. The word "exploration" means straight exploration as shown in section 7(a) of Mineral Order 5, copy of which is enclosed. This is for the search for ore only. It must not be confused with "development" which means blocking out ore to prepare it for production.

2. The Government lien would apply only to the specific mining claims included in the project.

3. The pay back royalties are confined to the ore which is discovered as the result of the project.

4. Yes.

5. The lien against the property definitely terminates in ten years.

6. The existence of one project does not prohibit the inauguration of a second project on the same block of ground if, in the opinion of the examining engineers, it is found desirable. If two separate projects are in force, you are correct is assuming a, b, and c.

Very truly yours,

George B. Holderer
Chief, Tungsten Branch

Enclosures 2

GBHolderer:dgs
August 16, 1951

CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Files

340

AUG 13 1951

SURCEASE MINING COMPANY

214 30TH STREET PHONE GILBERT 3-8593

SACRAMENTO 16, CALIFORNIA

Aug. 10, 1951

Mr. James Boyd
Defense Minerals Administrator
Interior Building
Washington 25, DC

Dear Mr. Boyd:

The following questions arise in connection with government-participation exploration projects under MO-5 generally, and more specifically against an application which we ourselves now have in process (Docket DMA-1636). Some of these questions are apparently answered, by inference at least, in the contract form MF-200, but nevertheless some question about them still remains.

1. Does the term "exploration", as the subject of such projects, embrace the broad field of exploration and development or is the intended field confined to pure exploration? Can the term be more definitely defined for the purposes of this work?

2. Will government lien for security attach only to the specific mining claims or specific blocks of ground upon which work will be done, rather than on all holdings of the operator?

3. Will pay-back royalties be confined to ore found by the project rather than attach to all production of the operator?

4. Can the contract or lien be terminated at any time by operator upon re-imbursement to government for all moneys advanced?

5. Will lien against property definitely terminate in ten years if any part of government advances still remains?

6. Supposing it were found desirable to initiate a second form of exploration (such as open cuts or shaft sinking) upon property already under lien by a Form MF-200 contract, say for drilling. Could that property be security for second project also? Or, putting it another way, would the existence of one such project prohibit the inauguration of a second project (of different nature) on the same parcel or block of ground?

(6 con'd)

If two separate projects could be applied to the same parcel of property, either of the following situations could prevail:

(a) Both unproductive: No amortization royalty.
(b) One productive: Royalty for that project only.
(c) Both productive: Royalty applicable for each project.

Would that be correct?

Anticipating an early reply to these questions, we are,

Sincerely yours,

SURCEASE MINING CO.

by J. W. Hoefling Pres.

JWH:jbg
Airmail

cc: Mr. H. C. Miller
1012 Flood Bldg.
San Francisco, Calif.

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

For Approval

Contingent on applicant's furnished schedules showing supervision and facilities to be furnished; ~~also on applicant agreement to pay 5% royalty on future production of claims held.~~

Docket No. 1636-X

Commodity Tungsten

Total Amount $64,800

Govt. Participation $48,600

1. Name and Address of Applicant Surcease Mining Co.
   214 30th Street, Sacramento 16, California

2. Location of Property Atolia, San Bernardino County, California

3. Mineral or metal Tungsten -- scheelite Is it listed in Section 9 of MO-5?

   If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

   Mines or Survey reports, etc., do you rate chances:

   a) Good ########## Good

   b) Poor

   c) None

   d) Don't know—needs field examination

   e) Is there an alternative and favorable project? (If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes (question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? No

   Does the lease have sufficient time to run to cover a future productive period? Applicant will complete payments and obtain title to property about August 1, 1951.

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes. Applicant proposes that the project be approved with proviso that the applicant advance the full costs and

a) MF-201? ~~be repaid by the Government when applicant proves clear title~~ to the property.

b) MF-202 _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? The project is adequately described in general terms as to amount of drilling in given blocks of ground, but the precise depths and locations of the holes are not given.
If not, are there sufficient data given so that you can describe the project? _____ If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? A general map of the property is submitted, to which the written description can be referred.

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Drilling on contract. Incidental expenses on part of applicant not itemized.

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data?_____ If so, attach a draft.

e) Are the cost estimates reasonable? Drilling cost estimate reasonable.

f) Should more information be requested from applicant?_____

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes, for statement for water and power to be furnished.

b) Sufficient data?_____ If so, attach a draft.

c) Are rents and charges reasonable?_____

d) Is a field check needed? No

13. Exhibit D (question 23-a, b)* Information needed from applicant.

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed?_____

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed?_____

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data?

c) Reasonable?

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing

~~XXXXXXXX~~ Field examination not needed.

It is recommended that the project be approved for the sum requested with the following provisos:

1.) Applicant shall furnish schedules C and D.

2.) Applicant shall furnish landlord's subornation agreement, or shall receive no Government funds until clear title is demonstrated. Applicant may proceed with project, but will be reimbursed only after title is clear.

~~3.) Applicant shall agree to re-imburse the Government at the rate of 5% of the value of scheelite produced from the property beginning at the end of the exploration and continuing for 10 years from the date of this contract, or until the total amount contributed by the Government is repaid. This proviso is needed because the nature of the deposits is such that diamond drilling will not prove ore, but will give information leading to ore development from underground workings. The Government will not be able to evaluate the discoveries solely on the basis of drill cores.~~

Reviewed by: Dwight M. Lemmon

George B. Holderer

Date June 18, 1951

The above information has not been requested. We suggest that Prod. Exp. Div. telephone Mr Hoefling for information.

Approved
Tom Lyon

97692

List of File to P.E.D. 6/26/51

DMA 1636-X - Tungsten

Surcease Mining Co.

214 30th St., Sacramento 16,

California

1- Review of Application for Exploration Assistance

3- MF-103 with attachments & 2 maps (in letterfolder)

1- Referral Sheet

2- MF-100 with attachments & 2 maps (in letterfolder)

1- letter ~~of~~ Surcease to DMA ~~6/1/51~~ 5/29/51

1- Copy " " " "

1- Bull. 922-H U.S.G.S. Tungsten Deposits of the Atolia District.

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

For Approval

Contingent on applicant's furnished schedules showing supervision and facilities to be furnished; ~~also on applicant agreement to pay 5% royalty on future production of claims held.~~

Docket No. **1636-X**

Commodity **Tungsten**

Total Amount **$64,800**

Govt. Participation **$48,600**

1. Name and Address of Applicant **Surcease Mining Co.**

   214 30th Street, Sacramento 16, California

2. Location of Property **Atolia, San Bernardino County, California**

3. Mineral or metal **Tungsten -- scheelite** Is it listed in Section 9 of MO-5?

   If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

   Mines or Survey reports, etc., do you rate chances:

   a) Good ~~##########~~ Good

   b) Poor

   c) None

   d) Don't know—needs field examination

   e) Is there an alternative and favorable project? (If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? **Yes** (question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? **No**

   Does the lease have sufficient time to run to cover a future productive period? **Applicant will complete payments and obtain title to property about August 1, 1951.**

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes. Applicant proposes that the project be approved with proviso that the applicant advance the full costs and

a) MF-201? ~~be repaid by the Government when applicant proves clear title~~ to the property.

b) MF-202

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? The project is adequately described in general terms as to amount of drilling in given blocks of ground, but the precise depths and locations of the holes are not given.
If not, are there sufficient data given so that you can describe the project? If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work?

A general map of the property is submitted, to which the written description can be referred.

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is?

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Drilling on contract. Incidental expenses on part of applicant not itemized.

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data?_____ If so, attach a draft.

e) Are the cost estimates reasonable? Drilling cost estimate reasonable.

f) Should more information be requested from applicant?_____

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes, for statement for water and power to be furnished.

b) Sufficient data?_____ If so, attach a draft.

c) Are rents and charges reasonable?_____

d) Is a field check needed? No

13. Exhibit D (question 23-a, b)* Information needed from applicant.

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed?_____

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed?_____

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data?

c) Reasonable?

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing questions? Field examination not needed.

It is recommended that the project be approved for the sum requested with the following provisos:

1.) Applicant shall furnish schedules C and D.

2.) Applicant shall furnish landlord's subornation agreement, or shall receive no Government funds until clear title is demonstrated. Applicant may proceed with project, but will be reimbursed only after title is clear.

3.) Applicant shall agree to re-imburse the Government at the rate of 5% of the value of scheelite produced from the property beginning at the end of the exploration and continuing for 10 years from the date of this contract, or until the total amount contributed by the Government is repaid. This proviso is needed because the nature of the deposits is such that diamond drilling will not prove ore, but will give information leading to ore development from underground workings. The Government will not be able to evaluate the discoveries solely on the basis of drill cores.

Reviewed by: Dwight M. Lemmon

George B. Holderer

The above information has not been requested from applicant. W/ suggest that P.E.D. telephone Mr. Hoefling for information.

Date June 18, 1951

97692

DRAFT D.M.Lemmon 6-18-51

Mr. J. W. Hoefling, President
Surcease Mining Co.
214 30th Street
Sacramento 16, California

In reply, please refer to DMA 1636-X

Dear Mr. Hoefling:

In connection with your application for an exploration project for tungsten at Atolia, California, it is necessary that you provide a definite statement of the cost of the items to be furnished by the Company, such as supervision, water, power, and labor and supplies outside the contract price of $6 per foot of drilling. These estimates become a part of the exploration contract, as exhibits C and D, and must be adhered to. I am sending you herewith a copy of the contract form, for your information.

X

We do not anticipate that the Atolia Mining Co. will object to signing the necessary lessor's subordination agreement. If there is difficulty, our lawyers will probably accept your proposal that the Government's share of the project be withheld until you receive clear title to the property.

~~The nature of the Atolia deposits is such that a great deal of information leading to substantial production might be obtained from core drilling even though it is impossible to evaluate the drilling results directly. Therefore it will be difficult to determine the royalty basis upon which the Government shall be repaid. We suggest that your Company should agree to reimburse the Government, regardless of the apparent results of drilling, at the rate of 5% of value of production from underground workings in bedrock from the entire property beginning at the end of the exploration and continuing for 10 years from the date of the contract or until the total amount is repaid. An alternative would be to divide the property into blocks, each of which would carry this proviso. In the latter instance, the Government must be informed in detail about the drilling proposed in each block. Please let us know whether you will agree to such a proposal.~~

Very truly yours,

George B. Holderer

Enclosure [Form MF-200]

6/26/51

List of File to P.E.D.
DMA 1636-X - Tungsten
Surcease Mining Co.
214 30th St., Sacramento 16,
California

1- Review of Application for Exploration Assistance
3- MF-103 with attachments & 2 maps (in letterfolder)
1- Referral Sheet
2- MF-100 with attachments & 2 maps (in letterfolder)
1- letter Surcease to DMA ~~6/4/51~~ 5/29/51
1- Copy " " " "
1- Bull. 922-H USGS, Tungsten Deposits of the Atolia District.

dma/1636X

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Region III

1415 Appraisers Bldg.
630 Sansome Street
San Francisco 11, Calif.

June 1, 1951

Memorandum

To: Defense Minerals Administration, Washington, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: Application for Aid for an Exploration Project

The attached application was received in this office on June 1, 1951.

Applicant: Surcease Mining Company
214 - 30th Street
Sacramento 16, California

Date of Application: May 29, 1951

Estimated Cost: $64,800;00

Mineral or Metal: Tungsten

Percentage of Government Participation: 75%

Location of Mine: Atolia, Calif.

H. C. Miller

H. C. Miller
Executive Officer, DMA Field Team
Region III

P.S. Set of MF-100 forms also attached. Note that application was mailed at 6:00 PM May 31, or several hours before the deadline.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1636X

Date received 6-4-51

Participation

Burcease Mining Company
214 30th Street
Sacramento, 16, Calif.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUN 1 1951
SAN FRANCISCO, CALIFORNIA

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $64,800.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Atolia, Calif.

Date of filing MF-100 May 29, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?

*2. If a partnership, state names and addresses of partners.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.

*5. Are you the owner or the lessee of the property?

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None

7. If lessee, attach a copy of the lease and state if it is in good standing. Not applicable

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? $16,200.00, more or less — Yes.

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. See attached sheet.

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled. Milled & concentrated on property. Shipped by rail.

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.
None we know of.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Tungsten

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. See attached sheet

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See attached sheet.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Surcease Mining Company
(Name of company)

By J. R. Stoeffling
(Signature of authorized official)

May 30, 1951
(Date)

President
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

SURCEASE MINING CO.

BALANCE SHEET
12/31/50

M 7 103
(8)

ASSETS

Current Assets				
Cash, Control Bank Account		5,693.33		
Cash, Rev.Local " "		15,879.76	21,573.09	
Product Acct. Rec., Tungsten			54,517.52	
Product Inventory, Tungsten			45,986.65	
Misc. Accts. Rec.			1,368.17	
Recoverable Deposit on new Dragline			1,000.00	
Total Current Assets				124,445.43
Deferred Assets				
Prepaid Exp.	Prepaid Ins.	316.35		
	Prepaid Taxes	854.22		
	State Fund Deposit	300.00		
	Board Equalization	350.00	1,820.57	
Supply Inv.	Office	150.00		
	Atolia	11,532.87	11,682.87	
Total Deferred Assets				13,503.44
Fixed Assets	Atolia (Eqpt.)	137,824.91		
	Res. for Deprec.	59,057.43	78,767.48	
	Surcease & Y.H. Prop. (R.E.)		23,975.61	
	Office Equipment	410.33		
	Res. for Deprec.	149.00	261.33	
	Organization Costs		747.37	
	Goodwill, Rights, Equities		1.00	103,752.79
TOTAL ASSETS				$241,701.66

LIABILITIES

Current Liabilities				
Accounts Payable			15,475.45	
Payroll Tax Reserves			1,663.42	
Contract Payable (Cat, $600 mo.)			1,800.00	
Royalty Payable	Leasers	1,507.26		
	Atolia	7,187.46	8,694.72	
Total Current Liabilities				27,633.59
Long Term Notes (1967)			141,000.00	141,000.00
Capital Liabilities				
Corporate Stock			50,000.00	
Surplus/Deficit end 1949		-35,276.37		
1950 Gain		58,344.44	23,068.07	73,068.07
TOTAL LIABILITIES				$241,701.66

m 7 103
(8)

SURCEASE MINING CO.

PROFIT & LOSS
for year ending Dec. 31, 1950

Atolia Operation			
Leaser Tungsten Income	155,921.20		
Co. Oper. " "	140,810.37		
Gold Income	16,840.20		
Tungsten Income, Slime Tailings Sold	73,700.00		
Miscellaneous Income	2,369.62	389,641.39	
Operating Expense & Deprec.		298,922.99	
Operating Gain			90,718.40
Super Mold Option Write-off			-5,000.00
Capital Account, Sales & Misc. (final excess equipment liquidation losses)			-10,174.67
Miscellaneous Income			225.12
Surcease Mine (inactive)			
Miscellaneous Income		823.75	
Maintenance Costs		2,615.52	
Loss			-1,791.77
Overhead & General Expense			
Group Insurance		58.70	
Overhead		1,433.16	
Office		1,840.64	
Gen'l Mining & Prospecting		2,200.14	
Administrative Expense		2,850.00	
Interest		7,250.00	-15,632.64
1950 GAIN			$58,344.44

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento, Calif.

The Property

10. (a) Overall property consists of 55 patented lode claims and some 20 unpatented placer claims. Embraces all the property of Atolia Mining Co. and a fully equipped camp. Situated in Atolia Mining District, San Bernardino, County, California.

(b) Legal description of specific parcels upon which exploration project is to be conducted:

Union, Star, Moostone, Viewpoint, Manti, Paradox, Papoose, Eastside, Flatiron, Waverly, Par

All above claims covered by Mineral Survey 4708, Independence Serial 0273, patent issued by the U.S.A. on Jan. 18, 1916, to Atolia Mining Co., Patent No. 508238, recorded Feb. 11, 1916 in Book "K" Patents, Page 34, Recordsof San Bernardino County, Calif., and also recorded Feb. 25, 1916 in Book 18, Patents, Page 293, Records of Kern County, Calif.

Status of title as of date:
As of May 1st, 1944, Atolia Mining Co., a California corporation, granted a Lease & Option to J. W. Hoefling, A. M. Hoefling, and P. M. Hoefling, dba Hoefling Brothers, on these Atolia properties, for a term of 10 years and purchase price of $200,000. Agreement provides for right of Lessee/Optionees to assign their interests between themselves or to a successor corporation. Such interests duly assigned to Surcease Mining Company, a California corporation, upon latters incorporation Jan. 1, 1947. As of date, accrued payments to Atolia Mining Co. in the sum of $179,430.84 have actually been made on income cleared. Remainder of purchase price has been earned with payments therefor, and technical transfer of title, pending clearance of shipments or income now in process. Probably sixty days (or end of July) will fully clear title to Surcease Mining Co.

(In view of above time delay factor on actual ownership, may we suggest that it should not be any cause for delay or obstacle to quick action on this drilling project by setting up a simple proviso: Surcease Mining Co. could be authorized to proceed with the project, advancing full costs if necessary, with reimbursement later by government for its share of costs; but that such reimbursement be subject to final clearance of title to Surcease Mining Company.)

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

The Exploration

21. A comprehensive Diamond Drilling program of some 10,800 feet, more or less, as follows:

A considerable number of additional drill holes can be spotted with a variable degree of risk. The recently concluded program gave three fair showings out of six holes (two in one hole) which may lead to ore. The second Star hole passed very close to ore and was sufficiently encouraging for the leasers to plan a 200' drfit to explore the area.

Union. In the northwest trending block between the Union and the Star 1 an unexplored area exists with known veins, intersections, and possible blind mineralization. Two drill holes from 7th level would explore this area. Other drilling might be done to the west, depending on trenching results.

Union 7 - Hanging Wall - 2 holes 700, 600 -	1300'
Union 7 - Footwall - 1 hole	300'
West of Union	800'
Star - 2 underground	300'
Churchill	300'
	3000'

Total 3000 feet at $6.00 is $18,000.00

Central Area. In the vicinity of the Acaly, Moonstone, Viewpoint and others, there has been considerable production above flat faults some of which are ore-mineral. There is inadequate exploration below these faults, where the mineralization may be more consistent. Drilling should follow outcrop stripping and additional mapping. A number of short surface holes could give good results if properly placed.
20 holes at 100' ea. 2000' at $6.00 is $12,000.00

Paradox - Schoonmaker. Additional drilling to east and at different horizons is necessary in this area. There has been too much production not to anticipate additional ore.

2 Deep Holes	1200'
2 Shallow Holes	600'
	1800'

Total 1800' at $6.00 is $10,800.00

Papoose Area. Drilling for depth extensions as well as for H.W. and F.W. veins in Papoose area presents good opportunities.
Papoose Area 2000' at $6.00 is $12,000.00

Flatiron - Spanish - Par - H.W. Vein. Holes below Spanish and Flatiron present possibilities. There may be a blind vein in the area.
4 holes at 500' ea. - 2000' at $6.00 is $12,000.00

Form MF - 103

Item 21, The Exploration, continued:

Summary Drilling:

		Total Cost
Union	3000'	$18,000.00
Central	2000'	12,000.00
Paradox	1800'	10,800.00
Papoose	2000'	12,000.00
Flatiron, Spanish, Par	2000'	12,000.00
	10800'	$64,800.00

Total cost division: 75% $48,600; 25% $16,200.
Estimated time to complete: 6 months to one year.

22. Geologic basis of project.
This is very fully covered in connection with Form MF-100. Detail in (21) above. Extra copies of two maps attached:
Geologic Surface Map.
Map of Atolia Mines

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

Form MF - 103
Addenda

Requirements & Costs

23. It is anticipated that this work would be contracted, with a minimum of two rigs and preferably as many as four, to expedite. Costs estimated at 6.00 per foot average.

No investment, or only nominal, anticipated for equipment or supplies, being included in footage figure.

Power, water, utilities, supervision, incidental labor, etc., as would be furnished by applicant as part of its share of costs, is not readily calculable but should be nominal.

Direct labor required should not exceed 2 men per drill.

24. Time Schedule.

On the basis of an average expectancy of 20 feet per day, or 500 feet per month, per machine:

	2 machines	3 machines	4 machines
Progress, feet, per mo.	1,000	1,500	2,000
Cost per mo., @ $6 per ft.	$6,000	$9,000	$1,2000.
Completion expectancy, months	10.8	7.5	5.4

SURCEASE MINING COMPANY
214 30TH STREET PHONE GILBERT 3-8593
SACRAMENTO 16, CALIFORNIA

DEPARTMENT OF INTERIOR
BUREAU OF M
REGION
RECEI
JUN 1 1951
SAN FRANCISCO, CALIFORNIA

May 29, 1951

Refer to	Noted	Date
Answered		

Defense Minerals Administration
Interior Building
Washington 25, DC

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 14 1951
LANDS
Executive Secretary

Gentlemen:

Enclosed find four copies of application Form MF-100 duly filled out and executed, for Serialization of the Atolia (tungsten) mines of Surcease Mining Company, under MO-7, as a basis for material priorities and other government assistance to production.

Early advices as to Serialization and a material priority rating based thereon will be greatly appreciated as difficulty is now being encountered in getting adequate supplies for our expanding operations.

Very truly yours,

SURCEASE MINING CO.

by J. W. Hufling
President

JWH:jbg
Encls.

P.S. This full set of MF-100 applications is being forwarded via DMA Field Office, Region III, San Francisco, as it contains underlying basis for Form MF-103 under MO-5, concurrently being submitted to the latter office. Presumably one copy of MF-100 can thus be retained at that office to expedite matters, and balance then forwarded to Washington.

SURCEASE MINING COMPANY
P.O. Box 786
SACRAMENTO 4, CALIFORNIA

Copy
(Mr. Mulcin, S.F.)

May 29, 1951

Defense Minerals Administration
Interior Building
Washington 25, DC

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(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1636X

Date received 6-4-51

Participation

Surcease Mining Company
214 30th Street
Sacramento, 16, Calif.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUN 1 1951
SAN FRANCISCO, CALIFORNIA

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $64,800.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Atolia, Calif.

Date of filing MF-100 May 29, 1951

DMA Docket Number, if available

INSTRUCTIONS

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16—64067-1

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Surcease Mining Company
(Name of company)

By [signature]
(Signature of authorized official)

May 30, 1951
(Date)

President
(Title)

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M 7 1 0 3
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SURCEASE MINING CO.

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12/31/50

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	Atolia	11,532.87	11,682.87	
Total Deferred Assets				13,503.44
Fixed Assets	Atolia (Eqpt.)	137,824.91		
	Res. for Deprec.	59,057.43	78,767.48	
	Surcease & Y.H. Prop. (R.E.)		23,975.61	
	Office Equipment	410.33		
	Res. for Deprec.	149.00	261.33	
	Organization Costs		747.37	
	Goodwill, Rights, Equities		1.00	103,752.79
TOTAL ASSETS				$241,701.66

LIABILITIES

Current Liabilities				
Accounts Payable			15,475.45	
Payroll Tax Reserves			1,663.42	
Contract Payable (Cat, $600 mo.)			1,800.00	
Royalty Payable	Leasers	1,507.26		
	Atolia	7,187.46	8,694.72	
Total Current Liabilities				27,633.59
Long Term Notes (1967)			141,000.00	141,000.00
Capital Liabilities				
Corporate Stock			50,000.00	
Surplus/Deficit end 1949		-35,276.37		
1950 Gain		58,344.44	23,068.07	73,068.07
TOTAL LIABILITIES				$241,701.66

m 7-103
(8)

SURCEASE MINING CO.

PROFIT & LOSS
for year ending Dec. 31, 1950

Atolia Operation			
Leaser Tungsten Income	155,921.20		
Co. Oper. " "	140,810.37		
Gold Income	16,840.20		
Tungsten Income, Slime Tailings Sold	73,700.00		
Miscellaneous Income	2,369.62	389,641.39	
Operating Expense & Deprec.		298,922.99	
Operating Gain			90,718.40
Super Mold Option Write-off			-5,000.00
Capital Account, Sales & Misc. (final excess equipment liquidation losses)			-10,174.67
Miscellaneous Income			225.12
Surcease Mine (inactive)			
Miscellaneous Income		823.75	
Maintenance Costs		2,615.52	
Loss			-1,791.77
Overhead & General Expense			
Group Insurance		58.70	
Overhead		1,433.16	
Office		1,840.64	
Gen'l Mining & Prospecting		2,200.14	
Administrative Expense		2,850.00	
Interest		7,250.00	-15,632.64
1950 GAIN			$58,344.44

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento, Calif.

The Property

10. (a) Overall property consists of 55 patented lode claims and some 20 unpatented placer claims. Embraces all the property of Atolia Mining Co. and a fully equipped camp. Situated in Atolia Mining District, San Bernardino,County, California.

(b) Legal description of specific parcels upon which exploration project is to be conducted:

Union, Star, Modstone, Viewpoint, Manti, Paradox, Papoose, Eastside, Flatiron, Waverly, Par

All above claims covered by Mineral Survey 4708, Independence Serial 0273, patent issued by the U.S.A. on Jan. 18, 1916, to Atolia Mining Co., Patent No. 508238, recorded Feb. 11, 1916 in Book "K" Patents, Page 34, Recordsof San Bernardino County, Calif., and also recorded Feb. 25, 1916 in Book 18, Patents, Page 293, Records of Kern County, Calif.

Status of title as of date:
As of May 1st, 1944, Atolia Mining Co., a California corporation, granted a Lease & Option to J. W. Hoefling, A. M. Hoefling, and P. M. Hoefling, dba Hoefling Brothers, on these Atolia properties, for a term of 10 years and purchase price of $200,000. Agreement provides for right of Lessee/Optionees to assign their interests between themselves or to a successor corporation. Such interests duly assigned to Surcease Mining Company, a California corporation, upon latters incorporation Jan. 1, 1947. As of date, accrued payments to Atolia Mining Co. in the sum of $179,430.84 have actually been made on income cleared. Remainder of purchase price has been earned with payments therefor, and technical transfer of title, pending clearance of shipments or income now in process. Probably sixty days (or end of July) will fully clear title to Surcease Mining Co.

(In view of above time delay factor on actual ownership, may we suggest that it should not be any cause for delay or obstacle to quick action on this drilling project by setting up a simple proviso: Surcease Mining Co. could be authorized to proceed with the project, advancing full costs if necessary, with reimbursement later by government for its share of costs; but that such reimbursement be subject to final clearance of title to Surcease Mining Company.)

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

The Exploration

21. A comprehensive Diamond Drilling program of some 10,800 feet, more or less, as follows:

A considerable number of additional drill holes can be spotted with a variable degree of risk. The recently concluded program gave three fair showings out of six holes (two in one hole) which may lead to ore. The second Star hole passed very close to ore and was sufficiently encouraging for the leasers to plan a 200' drfit to explore the area.

Union. In the northwest trending block between the Union and the Star 1 an unexplored area exists with known veins, intersections, and possible blind mineralization. Two drill holes from 7th level would explore this area. Other drilling might be done to the west, depending on trenching results.

Union 7 - Hanging Wall - 2 holes 700, 600 -	1300'
Union 7 - Footwall - 1 hole	300'
West of Union	800'
Star - 2 underground	300'
Churchill	300'
	3000'

Total 3000 feet at $6.00 is $18,000.00

Central Area. In the vicinity of the Acaly, Moonstone, Viewpoint and others, there has been considerable production above flat faults some of which are pre-mineral. There is inadequate exploration below these faults, where the mineralization may be more consistent. Drilling should follow outcrop stripping and additional mapping. A number of short surface holes could give good results if properly placed.
20 holes at 100' ea. 2000' at $6.00 is $12,000.00

Paradox - Schoonmaker. Additional drilling to east and at different horizons is necessary in this area. There has been too much production not to anticipate additional ore.

2 Deep Holes	1200'
2 Shallow Holes	600'
	1800'

Total 1800' at $6.00 is $10,800.00

Papoose Area. Drilling for depth extensions as well as for H.W. and F.W. veins in Papoose area presents good opportunities.
Papoose Area 2000' at $6.00 is $12,000.00

Flatiron - Spanish - Par - H.W. Vein. Holes below Spanish and Flatiron present possibilities. There may be a blind vein in the area.
4 holes at 500' ea. - 2000' at $6.00 is $12,000.00

Form MF - 103

Item 21, The Exploration, continued:

Summary Drilling:

		Total Cost
Union	3000'	$18,000.00
Central	2000'	12,000.00
Paradox	1800'	10,800.00
Papoose	2000'	12,000.00
Flatiron, Spanish, Par	2000'	12,000.00
	10800'	$64,800.00

Total cost division: 75% $48,600; 25% $16,200.
Estimated time to complete: 6 months to one year.

22. Geologic basis of project.
This is very fully covered in connection with Form MF-100. Detail in (21) above. Extra copies of two maps attached:
Geologic Surface Map.
Map of Atolia Mines

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

Form MF - 103
Addenda

Requirements & Costs

23. It is anticipated that this work would be contracted, with a minimum of two rigs and preferably as many as four, to expedite. Costs estimated at 6.00 per foot average.

No investment, or only nominal, anticipated for equipment or supplies, being included in footage figure.

Power, water, utilities, supervision, incidental labor, etc., as would be furnished by applicant as part of its share of costs, is not readily calculable but should be nominal.

Direct labor required should not exceed 2 men per drill.

24. Time Schedule.

On the basis of an average expectancy of 20 feet per day, or 500 feet per month, per machine:

	2 machines	3 machines	4 machines
Progress, feet, per mo.	1,000	1,500	2,000
Cost per mo., @ $6 per ft.	$6,000	$9,000	$1,200o.
Completion expectancy, months	10.8	7.5	5.4

F-103
(51)

U. DEPARTMENT OF THE INTER R

DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1636 X

Date received 6-4-51

Participation

Surcease Mining Company
214 30th Street
Sacramento, 16, Calif.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUN 1 1951
SAN FRANCISCO, CALIFORNIA

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $64,800.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Atolia, Calif.

Date of filing MF-100 May 29, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?

*2. If a partnership, state names and addresses of partners.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.

*5. Are you the owner or the lessee of the property?

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None

7. If lessee, attach a copy of the lease and state if it is in good standing. Not applicable

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? $16,200.00, more or less --- Yes.

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any [illegible]ng mine or operating property. See attached sheet.

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled. Milled & concentrated on property. Shipped by rail.

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.
None we know of.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Tungsten

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. See attached sheet

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See attached sheet.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Surcease Mining Company
(Name of company)

By [illegible]
(Signature of authorized official)

May 30, 1951
(Date)

President
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

M.F.-103
(8)

SURCEASE MINING CO.

BALANCE SHEET
12/31/50

ASSETS

Current Assets				
Cash, Control Bank Account		5,693.33		
Cash, Rev.Local " "		15,879.76	21,573.09	
Product Acct. Rec., Tungsten			54,517.52	
Product Inventory, Tungsten			45,986.65	
Misc. Accts. Rec.			1,368.17	
Recoverable Deposit on new Dragline			1,000.00	
Total Current Assets				124,445.43
Deferred Assets				
Prepaid Exp.	Prepaid Ins.	316.35		
	Prepaid Taxes	854.22		
	State Fund Deposit	300.00		
	Board Equalization	350.00	1,820.57	
Supply Inv.	Office	150.00		
	Atolia	11,532.87	11,682.87	
Total Deferred Assets				13,503.44
Fixed Assets	Atolia (Eqpt.)	137,824.91		
	Res. for Deprec.	59,057.43	78,767.48	
	Surcease & Y.H. Prop. (R.E.)		23,975.61	
	Office Equipment	410.33		
	Res. for Deprec.	149.00	261.33	
	Organization Costs		747.37	
	Goodwill, Rights, Equities		1.00	103,752.79
TOTAL ASSETS				$241,701.66

LIABILITIES

Current Liabilities				
Accounts Payable			15,475.45	
Payroll Tax Reserves			1,663.42	
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	Atolia	7,187.46	8,694.72	
Total Current Liabilities				27,633.59
Long Term Notes (1967)			141,000.00	141,000.00
Capital Liabilities				
Corporate Stock			50,000.00	
Surplus/Deficit end 1949		-35,276.37		
1950 Gain		58,344.44	23,068.07	73,068.07
TOTAL LIABILITIES				$241,701.66

M7 103
(8)

SURCEASE MINING CO.

PROFIT & LOSS
for year ending Dec. 31, 1950

Atolia Operation			
Leaser Tungsten Income	155,921.20		
Co. Oper. " "	140,810.37		
Gold Income	16,840.20		
Tungsten Income, Slime Tailings Sold	73,700.00		
Miscellaneous Income	2,369.62	389,641.39	
Operating Expense & Deprec.		298,922.99	
Operating Gain			90,718.40
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Capital Account, Sales & Misc. (final excess equipment liquidation losses)			-10,174.67
Miscellaneous Income			225.12
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Loss			-1,791.77
Overhead & General Expense			
Group Insurance		58.70	
Overhead		1,433.16	
Office		1,840.64	
Gen'l Mining & Prospecting		2,200.14	
Administrative Expense		2,850.00	
Interest		7,250.00	-15,632.64
1950 GAIN			$58,344.44

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento, Calif.

The Property

10. (a) Overall property consists of 55 patented lode claims and some 20 unpatented placer claims. Embraces all the property of Atolia Mining Co. and a fully equipped camp. Situated in Atolia Mining District, San Bernardino, County, California.

(b) Legal description of specific parcels upon which exploration project is to be conducted:

Union, Star, Moonstone, Viewpoint, Manti, Paradox, Papoose, Eastside, Flatiron, Waverly, Par

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Status of title as of date:
As of May 1st, 1944, Atolia Mining Co., a California corporation, granted a Lease & Option to J. W. Hoefling, A. M. Hoefling, and P. M. Hoefling, dba Hoefling Brothers, on these Atolia properties, for a term of 10 years and purchase price of $200,000. Agreement provides for right of Lessee/Optionees to assign their interests between themselves or to a successor corporation. Such interests duly assigned to Surcease Mining Company, a California corporation, upon latters incorporation Jan. 1, 1947. As of date, accrued payments to Atolia Mining Co. in the sum of $179,430.84 have actually been made on income cleared. Remainder of purchase price has been earned with payments therefor, and technical transfer of title, pending clearance of shipments or income now in process. Probably sixty days (or end of July) will fully clear title to Surcease Mining Co.

(In view of above time delay factor on actual ownership, may we suggest that it should not be any cause for delay or obstacle to quick action on this drilling project by setting up a simple proviso: Surcease Mining Co. could be authorized to proceed with the project, advancing full costs if necessary, with reimbursement later by government for its share of costs; but that such reimbursement be subject to final clearance of title to Surcease Mining Company.)

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

The Exploration

21. A comprehensive Diamond Drilling program of some 10,800 feet, more or less, as follows:

A considerable number of additional drill holes can be spotted with a variable degree of risk. The recently concluded program gave three fair showings out of six holes (two in one hole) which may lead to ore. The second Star hole passed very close to ore and was sufficiently encouraging for the leasers to plan a 200' drfit to explore the area.

Union. In the northwest trending block between the Union and the Star 1 an unexplored area exists with known veins, intersections, and possible blind mineralization. Two drill holes from 7th level would explore this area. Other drilling might be done to the west, depending on trenching results.

Union 7 - Hanging Wall - 2 holes 700, 600 -	1300'
Union 7 - Footwall - 1 hole	300'
West of Union	800'
Star - 2 underground	300'
Churchill	300'
	3000'

Total 3000 feet at $6.00 is $18,000.00

Central Area. In the vicinity of the Acaly, Moonstone, Viewpoint and others, there has been considerable production above flat faults some of which are pre-mineral. There is inadequate exploration below these faults, where the mineralization may be more consistent. Drilling should follow outcrop stripping and additional mapping. A number of short surface holes could give good results if properly placed.
20 holes at 100' ea. 2000' at $6.00 is $12,000.00

Paradox - Schoonmaker. Additional drilling to east and at different horizons is necessary in this area. There has been too much production not to anticipate additional ore.

2 Deep Holes	1200'
2 Shallow Holes	600'
	1800'

Total 1800' at $6.00 is $10,800.00

Papoose Area. Drilling for depth extensions as well as for H.W. and F.W. veins in Papoose area presents good opportunities.
Papoose Area 2000' at $6.00 is $12,000.00

Flatiron - Spanish - Par - H.W. Vein. Holes below Spanish and Flatiron present possibilities. There may be a blind vein in the area.
4 holes at 500' ea. - 2000' at $6.00 is $12,000.00

Form MF - 103

Item 21, The Exploration, continued:

Summary Drilling:

		Total Cost
Union	3000'	$18,000.00
Central	2000'	12,000.00
Paradox	1800'	10,800.00
Papoose	2000'	12,000.00
Flatiron, Spanish, Par	2000'	12,000.00
	10800'	$64,800.00

Total cost division: 75% $48,600; 25% $16,200.
Estimated time to complete: 6 months to one year.

22. Geologic basis of project.
This is very fully covered in connection with Form MF-100. Detail in (21) above. Extra copies of two maps attached:
Geologic Surface Map.
Map of Atolia Mines

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

Form MF - 103
Addenda

Requirements & Costs

23. It is anticipated that this work would be contracted, with a minimum of two rigs and preferably as many as four, to expedite. Costs estimated at 6.00 per foot average.

No investment, or only nominal, anticipated for equipment or supplies, being included in footage figure.

Power, water, utilities, supervision, incidental labor, etc., as would be furnished by applicant as part of its share of costs, is not readily calculable but should be nominal.

Direct labor required should not exceed 2 men per drill.

24. Time Schedule.

On the basis of an average expectancy of 20 feet per day, or 500 feet per month, per machine:

	2 machines	3 machines	4 machines
Progress, feet, per mo.	1,000	1,500	2,000
Cost per mo., @ $6 per ft.	$6,000	$9,000	$12,000.
Completion expectancy, months	10.8	7.5	5.4

Form MF-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMA 1636

Date received MS-0670

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUN 1 1951
SAN FRANCISCO, CALIFORNIA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 1951
LANDON F. STROBEL
Executive Secretary

Surcease Mining Company
214 30th Street
Sacramento 16, California

Name and address of applicant

Date May 29, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) ~~Necessity Certificate (Section 124 of the Internal Revenue Code, 1950, Depreciation Deductions)~~, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
J. W. Hoefling	President D	2850.00	$120M	196	-	none	
A. M. Hoefling	Vice-Pres. D	250.00	$100M	147	-	"	
P. M. Hoefling			80M	147	-	"	
K. Malone	D	6175.00	nominal	136	-	"	
D. A. Moyer	D	5787.50	"	117	-	"	
A. E. Jones	D	750.00	"	117	-	"	
Wm. E. Messner	Board Chmn. D	0	"	94	-	"	
J. B. Gee	Sec-Treas. D	1201.63	"	46	-	"	
	Total		x x x x x	1000		x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$ 50,000	$ 50,000	$ 50,000	50,000	25%
Preferred stock	$ none	$ -	$ -	-	-

*Indicate period covered. No definite period. Is alos first and total paid to date.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
Yards washed		125,000	60,000	54,000	7,000
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.) Tons, Leasers		1,500	2,000	2,700	250
2. Quantity of product processed (specify unit of measure and type of process) Units	W03	14,547	8,281	10,258	1,000
3. Quantity and grade of product sold or shipped (specify units of measure) + 60% concentrates	W03	14,547	8,281	10,258	1,000

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Surcease Mining Co.
(Name of company)

By J. W. Stoeffling
(Signature of authorized official)

May 29, 1951
(Date)

President
(Title)

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—63792-1

Form MF - 100

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

May 29, 1951

1. (a) Tungsten (Scheelite)
   (b) Gold, nominal and only occasionally.

2. Covers bulk of Atolia mining area, comprising some 1500 acres more or less. Includes Atolia Mining Company properties and Spud Patch Placer properties as formerly owned by Hoefling Brothers. Lode and placer.
   (a) (b) (c) (d) inapplicable. Most activity currently is surface work by open pitting, with some block leasing. No special pumping problems.
   Production capacity: Currently about 1,000 units WO3 per month. Expected to be doubled within few months, to 2,000 units. Potentials exist beyond that, dependent on continuing exploration. Could be substantially greater. This exclusive of tailings as referred to in Exhibit A.

3. (a) Property in northern fringe of Mojave Desert, on State Highway 395. 3 miles south of Red Mountain (Postoffice, population 100); 5 miles East of Randsburg (1000); 130 miles northeast of Los Angeles. Roads excellent. Railroads: Santa Fe, Boron Station, 30 miles south; Southern Pacific, Searles Station, 12 miles north.
   (b) Atolia Mining District.
   (c) Section 24, Twnsp. 30S, R 40 E. Sec. 17, 18, 19, 20, 21, Twnshp. 30 S, R 41 E. and other fringe area.
   (d) San Bernardino County, Calif., with fringes into Kern County.

4. (a) In operation now, by Surcease Mining Company.
   (b) Owners. (Final stages of acquisition now in progress. Only a matter of time, June 1951, to complete.)

5. Prpperty in production since 1906. 45 years. Present operators nine years this area.

6. Mining Experience of Operators:
   (a) Surcease Mining Co., incorporated Jan. 1, 1947 to embrace the mining interests and personnel organization of Hoefling Brothers, dating back to 1933. Main product till 1942, Gold, lode, Surcease Mine, Butte County, California, production of $1,750,000. During war, Zinc/Copper, Big Bend Mine, Butte Co., production 7,118,813 lbs. zinc, 1,138,792 lbs. copper, 123,573 lbs. lead; and placer tungsten at Atolia, San Bernardino Co., 22,400 units, to May, 1944. Zinc under Premium Price Plan and $20,000 RFC Development Loan. Tungsten under MRC contract and $100,000 financing as "Advance Against Production". Both loans fully repaid. Operations since war: Continuation of tungsten operations at Atolia at sustained average rate of 1,000 - 1,500 units per month with addition of Lease/Option on Atolia Mining Company's properties. Latter now acquired by royalty payments from such sustained post-war production.
   (b) Project management: K. Malone, Mining Engineer, M.I.T., with company since 1936 (except for war service 1943-45) and resident manager since 1949.

7. (a) The Atolia property has been producing steadily since 1906, with exception of 3 yrs., 1920, 21, 22, presumably for lack of market. Operations by Atolia Mining Co. until 1944 when property was taken under Lease & Option by what is now Surcease Mining Co. The latter has operated it continually since that time. Main form of operation (since 1944) has been recovery from placer, dumps, tails, ore ends and open pitting on stoped out vein structure --- in effect a gleaning operation -- by low cost/volume methods and block leasing. Roughly 1,000,000 units was produced by Atolia Mining Co., and 100,000 units by the Surcease Mining Company group.

Relatively little pure exploration has been done on these extensive properties in the past. A fairly extensive program of Diamond Drilling was carried out in the early 40's by the U. S. Bureau of Mines but planned objectives apparently were not reached. Another limited program of drilling was undertaken by the Bureau in early 1951, in the hope of getting sufficient support therefrom on which to base a more comprehensive program. While some results were achieved they were not considered sufficient, under current heavy demands on Bureau's budget and services, to proceed further. More comprehensive program of drilling, based upon recent geologic studies and co-relation of accrued data and experience, is now planned, along with other forms of exploration. Geophysical survey of placer area arranged for. Substantial program of trenching on schedule.
(b) Neighboring properties: The only other tungsten producers of any consequence in the area have been adjoining the Atolia property, apparently on the same general structure.
(c) Private reports: A summary of current informal reports attached, Exhibit A.

8. (as per blanks filled in on form)
9. "
10. "

11. Monthly rate of production expected to be doubled within next 30-60 days, by virtue of improved facilities and expanded mining rate.

12. All parts (a) (b) and (c) can be answered only in general terms. Ore reserves as such not calculable. Procedure in mining is on basis of experience and probabilities. Refer to following attached Exhibits: Exhibit B, U.S.G.S. Bulletin 922-H * "Tungsten Deposits of the Atolia District". Exhibit C, Map, Geologic Surface. Exhibit D, Map, Atolia Mines.

Lode mineralization is in structure zone some 1/2 mile wide and two miles long, While known or exposed veins have been mined by underground methods under past low price conditions, under stimulus of higher price this structure is being further exploited now by open pitting and block leasing.

Placer mineralization also occurs in this same area to a limited extent, with main placer potentials lying down grade to the East. These have been partially exploited in the past (World War IIand since) to the extent of some 50 - 60,000 unitts but operations on them were discontinued in 1949 basis of unfavorable cost/price ratio. Re-activation now scheduled pending geophysical survey of bedrock contours. No satisfactory method of testing, other than actual mining, has been deemed practical. Heavy layer of over-burden, but easy digging, is involved.

13. Access roads: Covered in Section 3 (a).

14. Water: Source, wells. 200-250 gallons per minute year around.

15. Power: Calif. Electric Power Co. with sub-station on property. 150,000 KWH, more or less, per month. Rate: From .05 to .008 per KWH.

16. Labor: Current payroll 25 (+6 staff). Dragline operators 3. Truck drivers 2. Cat skinners 2. Miners 2. Mill & Washing Plant 7. Mechanics & welders 4. Labor 5. Payroll to be expanded by probably 50% shortly in program of doubling production. Does not include some 35 leasers.

*One only available. With Master Copy. Available for reference in any Mining Bureau office.

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

Exhibit A 7(c) (m 3-100)

Summary of Private Reports

1. PRODUCTION POTENTIALS - ATOLIA

OPEN PITTING, HARD ROCK:

Tungsten occurs over some two miles of structure in the Atolia district. This entire length has open pit possibilities. At present these are being exploited in the Amity and Papoose Areas. Pits have also been opened on the Flatiron F.W., Churchill and West Union. Pits from previous operations exist on the Spanish-Par, Flatiron and Paradox. Each of these is a good bet under present prices. There is little doubt that among the above listed one or more could become productive.

Additionally, many areas exist with excellent chances for open pitting. Between the Rainstrom claim and State Highway, six tungsten bearing structures exist. While it is true that production from this area has been small and some geologic opinion tends to discount it as a potential productive area, there are appreciable tungsten showings over 2000' on two of these structures. Locally the Acaley, Rainstorm and Goldstone have produced small, strong ore bodies. The Acaley and Rainstorm have a production of over one-half million on the basis of $65.00 tungsten. The areas where mineral deposition was too lean to allow underground mining may well be very favorable for open pitting since the entire mineral deposition remains.

Many other structures exist which even if individually they offer small promise, together they offer good to excellent chances for production. None of the open pit possibilities, with the possible exception of the old Spanish-Parpit require any big risk. It is merely a question of putting a shovel on any of them to get a mill test of the rock and moving off if results are negative. Experience does not indicate consecutive negative showings with tungsten at $65.00 on such prospects.

DEEP PLACER:

Some 9100 units were produced from 100,000 yards of pay gravel at $25.00 to $27.00 price. Over 1,000,000 yards of dirt overall were handled. This operation became uneconomical and was finally closed down in June 1949. Higher price now changes the picture but more risk is involved than in open pitting (current main basis of production). Geophysical survey of bedrock contours to outline pay channels now being undertaken as a basis for most aggressive attack in re-opening these workings.

SHALLOW PLACER:

At new price many possibilities exist for production from this source. The east end of the Spud Patch, the area west of #3 toward the Amity, and the area south of #1 all have production potentials.

LEASERS:

Leasers will continue to play their part in exploiting the many prospects through-out the area, not amenable to mechanized company operation. Production from this source has been running

about 500 units per month.

MILL TAILS:

A prospective 183,500 tons of tailings (slimes and sands) exist on the property, varying in grade from 0.13% WO# to 1.5%, with an indicated 57,000 units of contained WO3 and estimated recovery of 42,000 units.

So far, (May, 1951) sampling and metallurgy have been completed on some 35,000 tons of one of the toughest appearing fractions, old float slime tails of 0.26 grade. Indicated recovery is 65%, 5900 units, and a margin that should return cost of the necessary slime flotation plant of 150 - 200 T/day capacity, plus some profit. An additional 52,000 tons containing perhaps 30,000 gross units could then be treated in such a plant. Upon completion of slimes retreatment, a grinding unit could be added to treat an additional 90,000 - 100,000 tons of sands running from 0.13 to 0.60%. This would be marginal but could produce (recover) some 10,000 units.

Further sampling and metallurgy is being conducted on these tails before final decisions.are made on their exploitation. Because of required plant investment and the time element, the applicability of five year floor price guarantee would also be an important factor in final decision.

2. EXPLORATION

The above production potentials are based upon known conditions, experience and expectancies. They are still largely in the category of ore ends and known sources now re-vitalized by the sudden change in cost/price ratio. The following have to do with search for extensions of old ore bodies and for entirely new ore bodies, which area is still relatively unexplored.

DIAMOND DRILLING:

Among the more promising areas to explore by this method are the following:

Flatiron Spanish Par Area. Production from this area over 100,000 units. A series of holes to cut the vein system perhaps 100' below present workings might disclose new ore shoots. The Flatiron mine in particular has a promising showing on the 4th level.

Papoose Area. Production from this area over 125,000 units from some 8,000 tons. Vein is faulted some 200' below surface. Geological evidence and opinion is that there is no known reason for ore not to exist below the fault. The richness of this ore body makes drilling for extensions an excellent bet. A series of flat holes in both N.W. and F.W. in the Papoose area might also reveal ore shoots. There are many parallel veins in the area.

Paradox-Schoonamaker Area. Production over 25,000 units, deepest workings 165', high grade ore. Drilling to locate extensions in depth and to the east might show favorable results.

Acaley Area. This area produced 5,000 units from 743 tons of ore. The vein is cut by a series of step faults. Practically no real exploration of extensions of ore shoots has been done on this vein. Drilling to determine location of vein below the third level might show additional ore.

Churchill Area. No production figures available as they are included in figures for Union area. Lying between the Union and the Amity, both major producers in the district, the area has promise of ore in depth.

Union Area. Production 600,000 units. A comprehensive drilling program here should explore both H.W. and F.W. and search for extensions to the west. Location of additional ore shoots along the Union structure to the west is a distinct possibility.

TRENCHING

It is believed that considerable ore and geological information can be uncovered by surface stripping of vein outcrops and crosscut trenches over the entire property. Some of the most important are (A) in the central belt, (B) Westerly from the Union and Star, (C) Paradox area, (D) Papoose and East End.

GEOPHYSICS:

In the absence of a known geophysical method of locating scheelite directly, dependence must be place on indirect methods. The most promising is tracing the buried "Spud Patch" channel to the east, in order to delimit the channel more precisely and to investigate for changes in dradient and trends. Bedrock contouring with seismic equipment would pinpoint the channel if the control was adequate.

GEOLOGICAL STUDIES:

In addition to the necessary amplification of routine mapping of development faces, raises, stopes and trenches with a study of the structure and mineralization, certain problems exist which might lead to results when solved.

(1) All geological data on the west end of the district from the Union to and beyond the White Mine, and north to the mountains should be collected and placed on one map. This would include available placer holes, with bedrock depths and data on value distribution. This map might give a clue as to the western extension of the zone, beneath the alluvium. This is the biggest geological problem in the district; it might be solved in this way. Trenching would follow.

(2) An accurate map should be prepared showing known channels and values to determine if there are or are not two overlapping drainage patterns and if so what is the influence on placer distribution.

(3) Considerable mapping could be done north and east of the Union in an attempt to gather data to substantiate a drill hole at depth near the Big Orange Fault, between the Amity and the Moonstone, or below the Amity. A study of mineralization and fractures on both sides of this fault would be of value. This is a gamble for a major ore body, which does not outcrop.

(4) A geological study with mapping of wall rock alteration together with an attempt to differentiate the Quartz Monzonite rock types would lead to a better understanding of ore deposition.

(5) Considerable additional geological mapping north of the Papoose will be necessary prior to spotting drill holes and might lead to an ore body.

Form MF-103
(April 1951)

U[redacted] DEPARTMENT OF THE INTER[redacted]R
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1636X

Date received 6-4-51

Participation

Surcease Mining Company
214 30th Street
Sacramento, 16, Calif.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
JUN 1 1951
SAN FRANCISCO, CALIFORNIA

Name and address of applicant

Date May 30, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $64,800.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Atolia, Calif.

Date of filing MF-100 May 29, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing. Not applicable

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Attached
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? $16,200.00, more or less --- Yes.

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. See attached sheet.

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled. Milled & concentrated on property. Shipped by rail.

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.
None we know of.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Tungsten

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. See attached sheet

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See attached sheet.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Surcease Mining Company
(Name of company)

By [signature]
(Signature of authorized official)

May 30, 1951
(Date)

President
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

SURCEASE MINING CO.

m 7-103
(8)

BALANCE SHEET
12/31/50

ASSETS

Current Assets				
Cash, Control Bank Account		5,693.33		
Cash, Rev.Local " "		15,879.76	21,573.09	
Product Acct. Rec., Tungsten			54,517.52	
Product Inventory, Tungsten			45,986.65	
Misc. Accts. Rec.			1,368.17	
Recoverable Deposit on new Dragline			1,000.00	
Total Current Assets				124,445.43
Deferred Assets				
Prepaid Exp.	Prepaid Ins.	316.35		
	Prepaid Taxes	854.22		
	State Fund Deposit	300.00		
	Board Equalization	350.00	1,820.57	
Supply Inv.	Office	150.00		
	Atolia	11,532.87	11,682.87	
Total Deferred Assets				13,503.44
Fixed Assets	Atolia (Eqpt.)	137,824.91		
	Res. for Deprec.	59,057.43	78,767.48	
	Surcease & Y.H. Prop. (R.E.)		23,975.61	
	Office Equipment	410.33		
	Res. for Deprec.	149.00	261.33	
	Organization Costs		747.37	
	Goodwill, Rights, Equities		1.00	103,752.79
TOTAL ASSETS				$241,701.66

LIABILITIES

Current Liabilities				
Accounts Payable			15,475.45	
Payroll Tax Reserves			1,663.42	
Contract Payable (Cat, $600 mo.)			1,800.00	
Royalty Payable	Leasers	1,507.26		
	Atolia	7,187.46	8,694.72	
Total Current Liabilities				27,633.59
Long Term Notes (1967)			141,000.00	141,000.00
Capital Liabilities				
Corporate Stock			50,000.00	
Surplus/Deficit end 1949		-35,276.37		
1950 Gain		58,344.44	23,068.07	73,068.07
TOTAL LIABILITIES				$241,701.66

m 7-103
(8)

SURCEASE MINING CO.

PROFIT & LOSS
for year ending Dec. 31, 1950

Atolia Operation			
Leaser Tungsten Income	155,921.20		
Co. Oper. " "	140,810.37		
Gold Income	16,840.20		
Tungsten Income, Slime Tailings Sold	73,700.00		
Miscellaneous Income	2,369.62	389,641.39	
Operating Expense & Deprec.		298,922.99	
Operating Gain			90,718.40
Super Mold Option Write-off			-5,000.00
Capital Account, Sales & Misc. (final excess equipment liquidation losses)			-10,174.67
Miscellaneous Income			225.12
Surcease Mine (inactive)			
Miscellaneous Income		823.75	
Maintenance Costs		2,615.52	
Loss			-1,791.77
Overhead & General Expense			
Group Insurance		58.70	
Overhead		1,433.16	
Office		1,840.64	
Gen'l Mining & Prospecting		2,200.14	
Administrative Expense		2,850.00	
Interest		7,250.00	-15,632.64
1950 GAIN			$58,344.44

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento, Calif.

The Property

10. (a) Overall property consists of 55 patented lode claims and some 20 unpatented placer claims. Embraces all the property of Atolia Mining Co. and a fully equipped camp. Situated in Atolia Mining District, San Bernardino, County, California.

(b) Legal description of specific parcels upon which exploration project is to be conducted:

Union, Star, Moonstone, Viewpoint, Manti, Paradox, Papoose, Eastside, Flatiron, Waverly, Par

All above claims covered by Mineral Survey 4708, Independence Serial 0273, patent issued by the U.S.A. on Jan. 18, 1916, to Atolia Mining Co., Patent No. 508238, recorded Feb. 11, 1916 in Book "K" Patents, Page 34, Recordsof San Bernardino County, Calif., and also recorded Feb. 25, 1916 in Book 18, Patents, Page 293, Records of Kern County, Calif.

Status of title as of date:
As of May 1st, 1944, Atolia Mining Co., a California corporation, granted a Lease & Option to J. W. Hoefling, A. M. Hoefling, and P. M. Hoefling, dba Hoefling Brothers, on these Atolia properties, for a term of 10 years and purchase price of $200,000. Agreement provides for right of Lessee/Optionees to assign their interests between themselves or to a successor corporation. Such interests duly assigned to Surcease Mining Company, a California corporation, upon latters incorporation Jan. 1, 1947. As of date, accrued payments to Atolia Mining Co. in the sum of $179,430.84 have actually been made on income cleared. Remainder of purchase price has been earned with payments therefor, and technical transfer of title, pending clearance of shipments or income now in process. Probably sixty days (or end of July) will fully clear title to Surcease Mining Co.

(In view of above time delay factor on actual ownership, may we suggest that it should not be any cause for delay or obstacle to quick action on this drilling project by setting up a simple proviso: Surcease Mining Co. could be authorized to proceed with the project, advancing full costs if necessary, with reimbursement later by government for its share of costs; but that such reimbursement be subject to final clearance of title to Surcease Mining Company.)

Form MF - 103
Addenda

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

The Exploration

21. A comprehensive Diamond Drilling program of some 10,800 feet, more or less, as follows:

A considerable number of additional drill holes can be spotted with a variable degree of risk. The recently concluded program gave three fair showings out of six holes (two in one hole) which may lead to ore. The second Star hole passed very close to ore and was sufficiently encouraging for the leasers to plan a 200' drfit to explore the area.

Union. In the northwest trending block between the Union and the Star 1 an unexplored area exists with known veins, intersections, and possible blind mineralization. Two drill holes from 7th level would explore this area. Other drilling might be done to the west, depending on trenching results.

Union 7 - Hanging Wall - 2 holes 700, 600 -	1300'
Union 7 - Footwall - 1 hole	300'
West of Union	800'
Star - 2 underground	300'
Churchill	300'
	3000'

Total 3000 feet at $6.00 is $18,000.00

Central Area. In the vicinity of the Acaly, Moonstone, Viewpoint and others, there has been considerable production above flat faults some of which are pre-mineral. There is inadequate exploration below these faults, where the mineralization may be more consistent. Drilling should follow outcrop stripping and additional mapping. A number of short surface holes could give good results if properly placed.
20 holes at 100' ea. 2000' at $6.00 is $12,000.00

Paradox - Schoonmaker. Additional drilling to east and at different horizons is necessary in this area. There has been too much production not to anticipate additional ore.

2 Deep Holes	1200'
2 Shallow Holes	600'
	1800'

Total 1800' at $6.00 is $10,800.00

Papoose Area. Drilling for depth extensions as well as for H.W. and F.W. veins in Papoose area presents good opportunities.
Papoose Area 2000' at $6.00 is $12,000.00

Flatiron - Spanish - Par - H.W. Vein. Holes below Spanish and Flatiron present possibilities. There may be a blind vein in the area.
4 holes at 500' ea. - 2000' at $6.00 is $12,000.00

Form MF - 103

Item 21, The Exploration, continued:

Summary Drilling:

		Total Cost
Union	3000'	$18,000.00
Central	2000'	12,000.00
Paradox	1800'	10,800.00
Papoose	2000'	12,000.00
Flatiron, Spanish, Par	2000'	12,000.00
	10800'	$64,800.00

Total cost division: 75% $48,600; 25% $16,200.
Estimated time to complete: 6 months to one year.

22. Geologic basis of project.
This is very fully covered in connection with Form MF-100. Detail in (21) above. Extra copies of two maps attached:
Geologic Surface Map.
Map of Atolia Mines

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

Form MF - 103
Addenda

Requirements & Costs

23. It is anticipated that this work would be contracted, with a minimum of two rigs and preferably as many as four, to expedite. Costs estimated at 6.00 per foot average.

No investment, or only nominal, anticipated for equipment or supplies, being included in footage figure.

Power, water, utilities, supervision, incidental labor, etc., as would be furnished by applicant as part of its share of costs, is not readily calculable but should be nominal.

Direct labor required should not exceed 2 men per drill.

24. Time Schedule.

On the basis of an average expectancy of 20 feet per day, or 500 feet per month, per machine:

	2 machines	3 machines	4 machines
Progress, feet, per mo.	1,000	1,500	2,000
Cost per mo., @ $6 per ft.	$6,000	$9,000	$1,2000.
Completion expectancy, months	10.8	7.5	5.4

Form MF-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMA 1636 X

Date received MS-0670

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
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JUN 1 1951
SAN FRANCISCO, CALIFORNIA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 14 1951
LANDON F. STROBEL
Executive Secretary

Surcease Mining Company
214 30th Street
Sacramento 16, California

Name and address of applicant

Date May 29, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) ~~Necessity Certificate pursuant to the provisions of Sec. 124 A (Amortization Deduction) of Internal Revenue Code, 1950~~ (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

X
5

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production .....

   If not in production or operation, estimated date when production will begin .....
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
J. W. Hoefling	President D	2850.00	$120M	196	-	none	
A. M. Hoefling	V-Pres. D	250.00	$100M	147	-	none	
P. M. Hoefling		0	$80M	147	-	none	
K. Malone	D	6175.00	normal	136	-	none	
D. A. Moyer	D	5787.50	normal	117	-	none	
A. E. Jones	D	750.00	normal	117	-	none	
W. E. Messner	Board Chmn. D	0	nominal	94	-	none	
J. B. Gee	Sec-Treas. D	1201.63	nominal	46	-	none	
	Total		x x x x x	1000		x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$ 50,000	$ 50,000	$ 50,000	50,000	25%
Preferred stock	$ none	$ -	$ -	-	-

*Indicate period covered. No definite period. Is also first and total paid to date.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.) Yards washed		125,000	60,000	54,000	7,000
Tons, Leasers		1,500	2,000	2,700	250
2. Quantity of product processed (specify unit of measure and type of process) Units	W0#	14,547	8,281	10,258	1,000
3. Quantity and grade of product sold or shipped (specify units of measure) + 60% concentrate	W03	14,547	8,281	10,258	1,000

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Surcease Mining Co.
(Name of company)

By [signature]
(Signature of authorized official)

May 29, 1951
(Date)

President
(Title)

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—63792-1

Form MF - 100

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

May 29, 1951

1. (a) Tungsten (Scheelite)
   (b) Gold, nominal and only occasionally.

2. Covers bulk of Atolia mining area, comprising some 1500 acres more or less. Includes Atolia Mining Company properties and Spud Patch Placer properties as formerly owned by Hoefling Brothers. Lode and placer.
   (a) (b) (c) (d) inapplicable. Most activity currently is surface work by open pitting, with some block leasing. No special pumping problems.
   Production capacity: Currently about 1,000 units WO3 per month. Expected to be doubled within few months, to 2,000 units. Potentials exist beyond that, dependent on continuing exploration. Could be substantially greater. This exclusive of tailings as referred to in Exhibit A.

3. (a) Property in northern fringe of Mojave Desert, on State Highway 395. 3 miles south of Red Mountain (Postoffice, population 100); 5 miles East of Randsburg (1000); 130 miles northeast of Los Angeles. Roads excellent. Railroads: Santa Fe, Boron Station, 30 miles south; Southern Pacific, Searles Station, 12 miles north.
   (b) Atolia Mining District.
   (c) Section 24, Twnsp. 30S, R 40 E. Sec. 17, 18, 19, 20, 21, Twnship. 30 S, R 41 E. and other fringe area.
   (d) San Bernardino County, Calif., with fringes into Kern County.

4. (a) In operation now, by Surcease Mining Company.
   (b) Owners. (Final stages of acquisition now in progress. Only a matter of time, June 1951, to complete.)

5. Property in production since 1906. 45 years. Present operators nine years this area.

6. Mining Experience of Operators:
   (a) Surcease Mining Co., incorporated Jan. 1, 1947 to embrace the mining interests and personnel organization of Hoefling Brothers, dating back to 1933. Main product till 1942, Gold, lode, Surcease Mine, Butte County, California, production of $1,750,000. During war, Zinc/Copper, Big Bend Mine, Butte Co., production 7,118,813 lbs. zinc, 1,138,792 lbs. copper, 123,573 lbs. lead; and placer tungsten at Atolia, San Bernardino Co., 22,400 units, to May, 1944. Zinc under Premium Price Plan and $20,000 RFC Development Loan. Tungsten under MRC contract and $100,000 financing as "Advance Against Production". Both loans fully repaid. Operations since war: Continuation of tungsten operations at Atolia at sustained average rate of 1,000 - 1,500 units per month with addition of Lease/Option on Atolia Mining Company's properties. Latter now acquired by royalty payments from such sustained post-war production.
   (b) Project management: K. Malone, Mining Engineer, M.I.T., with company since 1936 (except for war service 1943-45) and resident manager since 1949.

7. (a) The Atolia property has been producing steadily since 1906, with exception of 3 yrs., 1920, 21, 22, presumably for lack of market. Operations by Atolia Mining Co. until 1944 when property was taken under Lease & Option by what is now Surcease Mining Co. The latter has operated it continually since that time. Main form of operation (since 1944) has been recovery from placer, dumps, tails, ore ends and open pitting on stoped out vein structure --- in effect a gleaning operation -- by low cost/volume methods and block leasing. Roughly 1,000,000 units was produced by Atolia Mining Co., and 100,000 units by the Surcease Mining Company group.

Relatively little pure exploration has been done on these extensive properties in the past. A fairly extensive program of Diamond Drilling was carried out in the early 40's by the U. S. Bureau of Mines but planned objectives apparently were not reached. Another limited program of drilling was undertaken by the Bureau in early 1951, in the hope of getting sufficient support therefrom on which to base a more comprehensive program. While some results were achieved they were not considered sufficient, under current heavy demands on Bureau's budget and services, to proceed further. More comprehensive program of drilling, based upon recent geologic studies and co-relation of accrued data and experience, is now planned, along with other forms of exploration. Geophysical survey of placer area arranged for. Substantial program of trenching on schedule.
(b) Neighboring properties: The only other tungsten producers of any consequence in the area have been adjoining the Atolia property, apparently on the same general structure.
(c) Private reports: A summary of current informal reports attached, Exhibit A.

8. (as per blanks filled in on form)
9. "
10. "

11. Monthly rate of production expected to be doubled within next 30-60 days, by virtue of improved facilities and expanded mining rate.

12. All parts (a) (b) and (c) can be answered only in general terms. Ore reserves as such not calculable. Procedure in mining is on basis of experience and probabilities. Refer to following attached Exhibits: Exhibit B, U.S.G.S. Bulletin 922-H * "Tungsten Deposits of the Atolia District". Exhibit C, Map, Geologic Surface. Exhibit D, Map, Atolia Mines.

Lode mineralization is in structure zone some 1/2 mile wide and two miles long, While known or exposed veins have been mined by underground methods under past low price conditions, under stimulus of higher price this structure is being further exploited now by open pitting and block leasing.

Placer mineralization also occurs in this same area to a limited extent, with main placer potentials lying down grade to the East. These have been partially exploited in the past (World War IIand since) to the extent of some 50 - 60,000 units but operations on them were discontinued in 1949 basis of unfavorable cost/price ratio. Re-activation now scheduled pending geophysical survey of bedrock contours. No satisfactory method of testing, other than actual mining, has been deemed practical. Heavy layer of over-burden, but easy digging, is involved.

13. Access roads: Covered in Section 3 (a).

14. Water: Source, wells. 200-250 gallons per minute year around.

15. Power: Calif. Electric Power Co. with sub-station on property. 150,000 KWH, more or less, per month. Rate: From .05 to .008 per KWH.

16. Labor: Current payroll 25 (+6 staff). Dragline operators 3. Truck drivers 2. Cat skinners 2. Miners 2. Mill & Washing Plant 7. Mechanics & welders 4. Labor 5. Payroll to be expanded by probably 50% shortly in program of doubling production. Does not include some 35 leasers.

*One only available. With Master copy. Available for reference in any Mining Bureau office.

Surcease Mining Co.
214 30th Street
Sacramento 16, Calif.

Exhibit A 7(c) (M7-100)

Summary of Private Reports

1. PRODUCTION POTENTIALS - ATOLIA

OPEN PITTING, HARD ROCK:

Tungsten occurs over some two miles of structure in the Atolia district. This entire length has open pit possibilities. At present these are being exploited in the Amity and Papoose Areas. Pits have also been opened on the Flatiron F.W., Churchill and West Union. Pits from previous operations exist on the Spanish-Par, Flatiron and Paradox. Each of these is a good bet under present prices. There is little doubt that among the above listed one or more could become productive.

Additionally, many areas exist with excellent chances for open pitting. Between the Rainstrom claim and State Highway, six tungsten bearing structures exist. While it is true that production from this area has been small and some geologic opinion tends to discount it as a potential productive area, there are appreciable tungsten showings over 2000' on two of these structures. Locally the Acaley, Rainstorm and Goldstone have produced small, strong ore bodies. The Acaley and Rainstorm have a production of over one-half million on the basis of $65.00 tungsten. The areas where mineral deposition was too lean to allow underground mining may well be very favorable for open pitting since the entire mineral deposition remains.

Many other structures exist which even if individually they offer small promise, together they offer good to excellent chances for production. None of the open pit possibilities, with the possible exception of the old Spanish-Parpit require any big risk. It is merely a question of putting a shovel on any of them to get a mill test of the rock and moving off if results are negative. Experience does not indicate consecutive negative showings with tungsten at $65.00 on such prospects.

DEEP PLACER:

Some 9100 units were produced from 100,000 yards of pay gravel at $25.00 to $27.00 price. Over 1,000,000 yards of dirt overall were handled. This operation became uneconomical and was finally closed down in June 1949. Higher price now changes the picture but more risk is involved than in open pitting (current main basis of production). Geophysical survey of bedrock contours to outline pay channels now being undertaken as a basis for most aggressive attack in re-opening these workings.

SHALLOW PLACER:

At new price many possibilities exist for production from this source. The east end of the Spud Patch, the area west of #3 toward the Amity, and the area south of #1 all have production potentials.

LEASERS:

Leasers will continue to play their part in exploiting the many prospects through-out the area, not amenable to mechanized company operation. Production from this source has been running

about 500 units per month.

MILL TAILS:

A prospective 183,500 tons of tailings (slimes and sands) exist on the property, varying in grade from 0.13% WO# to 1.5%, with an indicated 57,000 units of contained WO3 and estimated recovery of 42,000 units.

So far, (May, 1951) sampling and metallurgy have been completed on some 35,000 tons of one of the toughest appearing fractions, old float slime tails of 0.26 grade. Indicated recovery is 65%, 5900 units, and a margin that should return cost of the necessary slime flotation plant of 150 - 200 T/day capacity, plus some profit. An additional 52,000 tons containing perhaps 30,000 gross units could then be treated in such a plant. Upon completion of slimes retreatment, a grinding unit could be added to treat an additional 90,000 - 100,000 tons of sands running from 0.13 to 0.60%. This would be marginal but could produce (recover) some 10,000 units.

Further sampling and metallurgy is being conducted on these tails before final decisions.are made on their exploitation. Because of required plant investment and the time element, the applicability of five year floor price guarantee would also be an important factor in final decision.

2. EXPLORATION

The above production potentials are based upon known conditions, experience and expectancies. They are still largely in the category of ore ends and known sources now re-vitalized by the sudden change in cost/price ratio. The following have to do with search for extensions of old ore bodies and for entirely new ore bodies, which area is still relatively unexplored.

DIAMOND DRILLING:

Among the more promising areas to explore by this method are the following:

Flatiron Spanish Par Area. Production from this area over 100,000 units. A series of holes to cut the vein system perhaps 100' below present workings might disclose new ore shoots. The Flatiron mine in particular has a promising showing on the 4th level.

Papoose Area. Production from this area over 125,000 units from some 8,000 tons. Vein is faulted some 200' below surface. Geological evidence and opinion is that there is no known reason for ore not to exist below the fault. The richness of this ore body makes drilling for extensions an excellent bet. A series of flat holes in both N.W. and F.W. in the Papoose area might also reveal ore shoots. There are many parallel veins in the area.

Paradox-Schoonamaker Area. Production over 25,000 units, deepest workings 165', high grade ore. Drilling to locate extensions in depth and to the east might show favorable results.

Acaley Area. This area produced 5,000 units from 743 tons of ore. The vein is cut by a series of step faults. Practically no real exploration of extensions of ore shoots has been done on this vein. Drilling to determine location of vein below the third level might show additional ore.

Churchill Area. No production figures available as they are included in figures for Union area. Lying between the Union and the Amity, both major producers in the district, the area has promise of ore in depth.

Union Area. Production 600,000 units. A comprehensive drilling program here should explore both H.W. and F.W. and search for extensions to the west. Location of additional ore shoots along the Union structure to the west is a distinct possibility.

TRENCHING

It is believed that considerable ore and geological information can be uncovered by surface stripping of vein outcrops and crosscut trenches over the entire property. Some of the most important are (A) in the central belt, (B) Westerly from the Union and Star, (C) Paradox area, (D) Papoose and East End.

GEOPHYSICS:

In the absence of a known geophysical method of locating scheelite directly, dependence must be place on indirect methods. The most promising is tracing the buried "Spud Patch" channel to the east, in order to delimit the channel more precisely and to investigate for changes in dradient and trends. Bedrock contouring with seismic equipment would pinpoint the channel if the control was adequate.

GEOLOGICAL STUDIES:

In addition to the necessary amplification of routine mapping of development faces, raises, stopes and trenches with a study of the structure and mineralization, certain problems exist which might lead to results when solved.

(1) All geological data on the west end of the district from the Union to and beyond the White Mine, and north to the mountains should be collected and placed on one map. This would include available placer holes, with bedrock depths and data on value distribution. This map might give a clue as to the western extension of the zone, beneath the alluvium. This is the biggest geological problem in the district; it might be solved in this way. Trenching would follow.

(2) An accurate map should be prepared showing known channels and values to determine if there are or are not two overlapping drainage patterns and if so what is the influence on placer distribution.

(3) Considerable mapping could be done north and east of the Union in an attempt to gather data to substantiate a drill hole at depth near the Big Orange Fault, between the Amity and the Moonstone, or below the Amity. A study of mineralization and fractures on both sides of this fault would be of value. This is a gamble for a major ore body, which does not outcrop.

(4) A geological study with mapping of wall rock alteration together with an attempt to differentiate the Quartz Monzonite rock types would lead to a better understanding of ore deposition.

(5) Considerable additional geological mapping north of the Papoose will be necessary prior to spotting drill holes and might lead to an ore body.

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1636X

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Exh. B

U. S. G. S. Bulletin 922-H

"Tungsten Deposits of the Atolia District."

UNITED STATES DEPARTMENT OF THE INTERIOR
Harold L. Ickes, Secretary

GEOLOGICAL SURVEY
W. C. Mendenhall, Director

Bulletin 922-H

TUNGSTEN DEPOSITS OF THE ATOLIA DISTRICT SAN BERNARDINO AND KERN COUNTIES CALIFORNIA

BY

DWIGHT M. LEMMON

AND

JOHN V. N. DORR 2D

Strategic Minerals Investigations, 1940
(Pages 205–245)

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1940

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - - - Price ~~35~~ cents
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CONTENTS

	Page
Abstract	205
Introduction	205
Location	205
History of mining	207
Production	208
Previous work	210
Field work	210
Acknowledgments	211
Geology	211
Rocks	212
Atolia quartz monzonite and allied dikes	212
Diabase dikes	213
Miocene sedimentary rocks	213
Alluvium	214
Structure	214
Lode deposits	216
Mineralogy	218
Rock alteration	220
Origin	220
Grade of ore	221
Ore shoots	221
Possibilities of ore at depth	223
Reserves	223
Placer deposits	225
Distribution	225
Reserves	228
Mines	229
Atolia Mining Co.	232
Union mine	232
Amity mine	235
Acaley mine	236
Rainstorm mine	236
Goldstone mine	237
Papoose mine	238
Flatiron, Spanish, and Par mines	238
Paradox No. 1 and No. 3 mines	239
Osdick group	240
Skylark mine	241
Big Ben shaft	241
Federal mine group	241
Atolia Rand Placers, Inc.	242
Redondo Pete shaft	242
Blackhawk Mining Co.	243
St. Elmo mine group	243
American Gold & Tungsten Corporation	244
Top Notch claim	244
Miscellaneous prospects	244
Sun and O'Neill shafts	244
I Guess shaft	245

ILLUSTRATIONS

		Page
Plate	35. Geologic map of the Atolia mining district	In pocket
	36. Plan and sections of the principal mines of the Atolia mining district	In pocket
	37. Claim map of the Atolia mining district	In pocket
Figure	36. Index map of southern California showing location of the Atolia mining district	206
	37. Section through the Union No. 1 shaft	233
	38. Section through the Acaley mine	237
	39. Veins and faults on the first level of the Paradox No. 3 mine	240

I Guess shaft.--The I Guess inclined shaft, which is 75 feet deep and without lateral workings, prospects a north-dipping vein consisting mainly of fine-grained brown quartz but containing some carbonate and scheelite. Although no ore is exposed in the shaft the vein is of interest because it is the farthest south of those known to contain scheelite.

American Gold & Tungsten Corporation

Top Notch claim.--The American Gold & Tungsten Corporation owns four unpatented lode claims north of the Union mine. The only known scheelite veins occur on the Top Notch claim. Although the Top Notch shaft, which constitutes the main underground development, is reported to have produced a little scheelite near the surface, the lower workings are barren. The shaft, 165 feet deep and inclined 38° N., follows a vein which contains considerable altered material, mainly carbonate, and adjoining which the quartz monzonite has been pyritized and sericitized. A vein that lies 150 feet north of the Top Notch shaft contained more scheelite but has been developed only by a shallow inclined shaft.

Several shallow prospect shafts to the east have been sunk in search of gold ore in a vein which strikes N. 32° W., dips 40°-60° NE., and appears to be continuous southeastward past the Redondo Pete shaft toward St. Elmo. This vein may offset the scheelite veins east of the Amity mine.

Miscellaneous prospects

Sun and O'Neill shafts.--In 1916 the Tungsten Development Co., now dissolved, attempted to find westerly extensions of the tungsten belt. Several vertical shafts were sunk through the thick alluvium,which was 127 feet thick in the Sun shaft, into the quartz monzonite, and considerable crosscutting was done. In the Sun and O'Neill shafts, the only ones examined for this report, several strongly kaolinized east-west fissures are intersected by the workings, but no scheelite is visible.

None of the other shafts sunk to intersect extensions of veins in the Union mine have found scheelite. The westernmost known occurrence in this zone is in the Star No. 2 shaft of the Atolia Mining Co.

TUNGSTEN DEPOSITS OF THE ATOLIA DISTRICT, SAN BERNARDINO AND KERN COUNTIES, CALIFORNIA

By Dwight M. Lemmon and John V. N. Dorr 2d

ABSTRACT

High-grade scheelite ore, with a quartz-carbonate gangue, has been mined in the Atolia mining district from steeply dipping fissure veins of Miocene age. A minor quantity of scheelite has been taken from placers. The country rock is quartz monzonite probably of late Jurassic age.

Approximately 821,000 units of tungsten trioxide (WO_3), equivalent to 13,683 tons of concentrates containing 60 percent of WO_3, has been produced from the district. Of this total, 94 percent came from veins and 6 percent from placers. About 54 percent of the total production has come from the Union mine, which has been developed to a depth of 1,021 feet. Only a few thousand tons of 2-percent ore is in sight in the veins, but future development may lead to the discovery of new ore bodies. Mill tailings contain an appreciable reserve, and they are now being re-treated. The placer deposits contain possibly 28,000,000 cubic yards estimated to average more than a quarter of a pound of scheelite per cubic yard, or a total of at least 280,000 units of WO_3. Certain parts of the placers contain sufficient scheelite to be workable at normal prices, and discovery of methods by which the gold content could be recovered might permit production of scheelite as a byproduct from the submarginal placers.

With favorable prices, it is believed that an annual production of 300 to 400 tons of 60-percent WO_3 concentrates may be maintained over a short period of years.

INTRODUCTION

Location

The Atolia mining district lies near the northern edge of the Mojave Desert, in San Bernardino and Kern Counties, Calif. (see fig. 36). A surfaced highway, U. S. 395, connects Atolia with Johannesburg and Randsburg, which lie 4 miles to the north, and with Kramer Junction, 23 miles to the south. No railroad

enters the district, as the Randsburg branch of the Atchison, Topeka & Santa Fe Railway has been abandoned. The Owenyo branch of the Southern Pacific Railroad lies 9 miles to the north and the main line of the Atchison, Topeka & Santa Fe Railway is 23 miles to the south, at Kramer Junction.

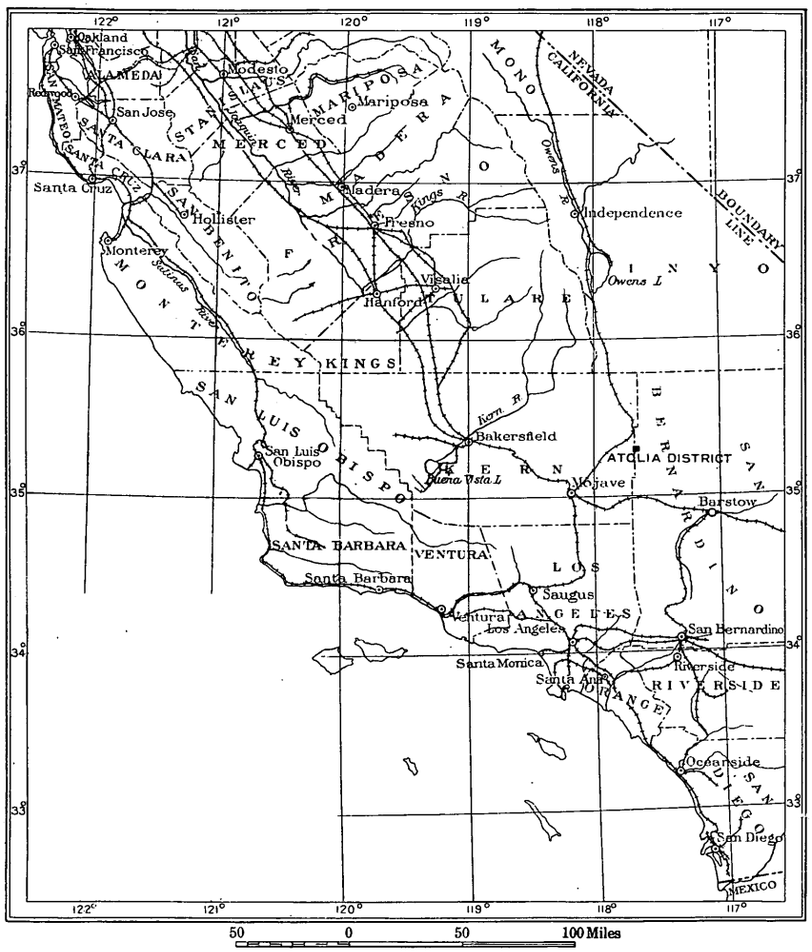

Figure 36.--Index map of southern California showing location of the Atolia mining district.

Blackhawk Mining Co.

The Blackhawk Mining Co. owns a tier of eight patented lode claims south of the Redondo Pete shaft. Several shallow shafts have been sunk on the northern two claims, Long's Folly and Long's Folly Extension, which lie in the belt of scheelite veins, but no important ore bodies were found. The remaining claims lie south of known scheelite veins but are of value for the blanket of alluvium, which contains placer gold and scheelite. None of the underground workings were accessible in 1940.

St. Elmo mine group

The St. Elmo mine group, consisting of six patented claims, contains no known scheelite veins. The St. Elmo mine, discovered in 1895, reputedly produced nearly $250,000 in gold from pockets close to the surface. The mine was abandoned for many years, but late in 1939 and early in 1940 a lessee was prospecting for new ore bodies. The workings consist of several shafts, the main vertical one being 300 feet deep, and of several thousand feet of drifts and crosscuts. At least two quartz veins were worked. The one at the main shaft strikes N. 10° E. and dips nearly vertically. The other, 150 feet to the east, strikes N. 45° E. and dips southeast. The ore body was apparently narrow but of high grade. Specimens from the dump show white quartz with free gold and limonite, which suggests that much of the gold occurred in pyrite before oxidation.

One of the St. Elmo veins can be traced half a mile northeast, but no other ore shoots have been found.

near-surface ore body might be found by crosscutting south, preferably on the first level, where such a crosscut was once started. It is not likely that scheelite ore bodies will be found by drifting or sinking on the fault, for no dragged scheelite has been found below the point where the vein was lost.

Atolia Rand Placers, Inc.

Redondo Pete shaft.--Atolia Rand Placers, Inc., subsidiary of the Molybdenum Corporation of America, although controlling a large placer acreage, has only one developed and patented lode claim--the Redondo Pete claim. In 1917 the Blackhawk Mining Co. leased this claim from the former owners and sank a vertical shaft. This shaft, abandoned in 1919, is now inaccessible. The following information is derived from various sources considered reliable.

The single-compartment vertical shaft was sunk to a depth of 500 feet, and levels were run at depths of 300 and 500 feet. On the 300-foot level a drift was run several hundred feet west on a fracture intersected in the shaft, but no ore was found. On the 500-foot level a crosscut was driven 500 feet south and two veins carrying scheelite were intersected about 300 and 400 feet from the shaft. The operators ran raises in the south vein and stoped a little ore, which produced about 5 tons of 60-percent WO_3 concentrate. The property was abandoned in 1918, when the price of tungsten fell. The War Minerals Relief Commission eventually paid a large claim for the development work.

Water is scarce. Domestic supplies are piped from wells northeast of Red Mountain, about 6 miles northeast of Atolia, and are sold at 3/4 cent a gallon. The industrial water supply is pumped from wells near Cuddeback Lake, now dry, 8 miles east of Atolia.

History of mining

Tungsten was first discovered in 1904 in placer operations at the St. Elmo gold mine south of Atolia. In tracing the placer northward, George Gaylord and Pat Burns overlooked the Atolia veins, although they located scheelite lenses in the Stringer district, several miles north of the Union mine. Shortly afterward the Papoose vein was discovered in an outcrop near the present town of Atolia, and within a few months the Union deposits at the west end of the field were discovered. The Atolia Mining Co. was organized in 1905, and most of the productive part of the district came under its control.

Wartime boom prices in 1916 brought thousands of miners into the district to work the placer deposits of the "Spud Patch," so named because the pieces of scheelite resembled potatoes. The richness of the ore led to high-grading and to theft of concentrates, and scheelite "spuds" were an acceptable medium of exchange in the bars and stores of the region.

Tungsten prices collapsed when the armistice was signed in 1918, and the district was inactive from then until 1924, when the Union mine was reopened. Large-scale placer operations were carried on in the Spud Patch area from 1926 to 1931.

In 1934 Atolia Rand Placers, Inc., purchased and leased surface rights in the western part of the Atolia district and drilled about 1,500 test holes to sample the gold-scheelite

placer deposits. The samples were treated in a small pilot mill, and later a large plant was constructed. This plant operated for about 6 months before being shut down because of poor recovery; it was afterward partly dismantled.

From 1936 to 1938 the Pacific Placers Engineering Co., controlled by J. K. Waddley, operated dry-placer machines in the Baltic Gulch area, between the Union mine and the Stringer district. This operation was experimental and was not on a large scale.

For many years much of the mining on the properties of the Atolia Mining Co. has been done by lessees, the company itself operating the mill and only occasionally working a few of the mines. The scale upon which lessees have operated ranges from the common two- or three-man partnership lease to companies that have employed 25 to 50 men, such as the Smoot & Main lease of the Flatiron and Par mines and the Rust & Main lease, which at one time operated the Union mine. In 1937 there were more than 50 leases in the field, upon which about 250 men were employed; but during 1938 and 1939 lower tungsten prices coupled with company policy caused a great decrease in this number, although there were still 27 men leasing on company property in February 1940. At that time about 40 men were working in the district besides the employees of the Atolia Mining Co. Recent company operations have been largely restricted to retreatment of tailings from the old Papoose mill and to a little underground development in the Paradox No. 3 mine.

Production

The quantity of concentrates produced and sold by the Atolia Mining Co. each year to the end of 1939 is listed in the table below and amounts to 795,148 units--more than 95 percent of the total output of the district. Production from other properties in the district, roughly estimated to total 26,000 units,

Skylark mine.--The Skylark mine explores a vein belonging to the Flatiron system and has produced considerable scheelite from a depth of less than 150 feet. The alluvium on bedrock near the vein was very rich, especially near the Skylark shaft, which enters bedrock at a depth of 27 feet. Little ore remains in sight in the mine, and the remnants are of low grade. Only annual assessment work has been done in recent years.

Big Ben shaft.--The Big Ben shaft, from which there has been no production, followed a narrow vein containing not more than 4 inches of quartz and scheelite to the first level. No ore was found on the lower levels, although there are a few traces of scheelite. This vein is an eastern continuation of the Spanish vein, in which profitable ore shoots have been mined in the Flatiron, Spanish, and Par mines.

Federal mine group

The Federal mine group, owned by J. C. Raynor, N. H. Meyers and G. T. Ingram, includes 14 unpatented lode claims south of the Atolia Mining Co.'s property. The most extensive underground workings are in the Federal mine. There are several other shafts, in some of which scheelite has been found, notably the Wedge Fraction, Monitor, and Ready Cash. None of the veins has made large production, and several small ore shoots are cut off by faults at shallow depths.

The Federal mine is developed by two unconnected shafts 83 feet apart and by several hundred feet of drifts from the west shaft. In both shafts small ore bodies seen near the surface were found to be faulted off about 40 feet below. The main shaft has been sunk 242 feet on the incline--170 feet vertical depth--and drifts have been run on two levels. The shaft and workings deeper than 40 feet follow barren fissures that carry considerable carbonate but no scheelite. The extension of the

Osdick group

The Osdick group, owned by P. J. Osdick, consists of seven unpatented lode claims on the east boundary of the Atolia Mining Co.'s property. Alluvium 20 to 60 feet deep covers the surface. Two veins discovered in placer operations were prospected through several shafts, the most important of which are the

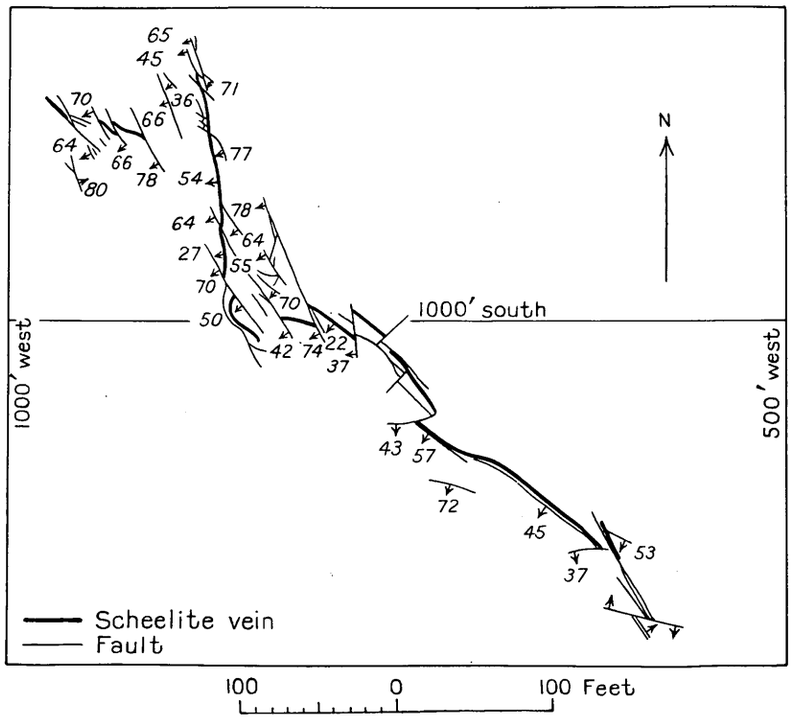

Figure 39.--Veins and faults on the first level of the Paradox No. 3 mine.

Skylark, which is 167 feet deep, and Big Ben, which is 185 feet deep. The number of units of WO_3 produced is unknown, although Mr. Osdick reports a monetary return of nearly $250,000 from the Skylark mine and the rich placer deposits near the Skylark shaft, mostly during the wartime boom of 1916-18.

brings the total for the district to 821,148 units. The second largest production has come from the Spud Patch placer deposits, which were most active in 1916-17. Hess [1] estimated the total production for those 2 years to be not more than 300 tons of concentrate containing 60 percent of WO_3 (18,000 units). The total placer production, including that from the Atolia Mining Co. placer plant, probably has not exceeded 50,000 units, or, roughly, 6 percent of the total production of the district.

Concentrates produced and sold by the Atolia Mining Co.

Year	Units [1]	Price per unit
1906	15,832.00	
1907	24,963.00	
1908	4,891.00	
1909	33,191.00	
1910	30,775.00	
1911	23,677.00	
1912	24,987.00	
1913	32,921.00	$ 7.98
1914	27,996.00	6.50
1915	54,375.00	14.03
1916	108,539.00	33.74
1917	116,307.00	18.54
1918	61,763.00	25.11
1919	4,086.51	16.70
1920	No concentrates shipped.	
1921		
1922		
1923	10,867.73	8.13
1924	8,057.13	8.28
1925	26,549.68	9.45
1926	20,161.02	12.60
1927	17,569.06	10.80
1928	17,598.23	10.53
1929	8,681.57	11.66
1930	5,898.81	11.87
1931	1,938.11	12.10
1932	1,888.92	7.75
1933	8,356.38	9.43
1934	14,058.61	14.47
1935	10,484.05	14.42
1936	12,116.36	15.27
1937	21,592.95	21.57
1938	20,233.62	19.42
1939	24,792.59	14.99
	795,148.33	

1/ A unit is 20 pounds of contained WO_3.

1/ Hess, F. L., Mineral Resources U. S., 1916, part 1, p. 791, and 1917, part 1, p. 933.

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general a gentle slope southeastward. It drains toward Cuddeback Lake, a playa about 7 miles east of Atolia. The rock that contains the scheelite veins and underlies all of the area mapped on plate 35 is the Atolia quartz monzonite, probably of late Jurassic age. Dikes of diorite, aplite, and granite, probably of Mesozoic age, cut the quartz monzonite, but because these dikes are not present in the principal mines and are covered with overburden on the surface they were not mapped. Two diabase dikes, probably of Miocene age, cut the quartz monzonite and the scheelite veins. Miocene sedimentary rocks known as the Rosamond series occupy a small area in the eastern part of the district. Quaternary alluvium covers most of the surface.

Rocks

Atolia quartz monzonite and allied dikes.--The Atolia quartz monzonite is a light-gray medium-grained, granitic rock, which consists mainly of nearly equal quantities of orthoclase, plagioclase, and quartz and contains minor quantities of hornblende and biotite. Common accessory minerals are sphene, apatite, and magnetite. The orthoclase is mostly interstitial between the plagioclase crystals.

The quartz monzonite in the mapped area is part of a large mass that forms the principal basement rock in the southern and eastern parts of the Randsburg quadrangle, although in Red Mountain and the Lava Mountains, to the northeast of Atolia, it is capped by the Miocene sedimentary rocks and andesite and is elsewhere largely covered by alluvium.

Several diorite dikes 5 to 15 feet thick are visible on the Paymaster claim, which is west of the highway and between Atolia and St. Elmo. Other dikes may be seen on the Paradox claim, southeast of the Paradox No. 1 mine and east of the

similar attitude and an unknown but probably small displacement, marks the eastern limit of ore found to date. The vein has been stoped to a depth of at least 165 feet, below which the shaft is filled. No gently dipping faults similar to those in the Acaley mine, to the south, have been found.

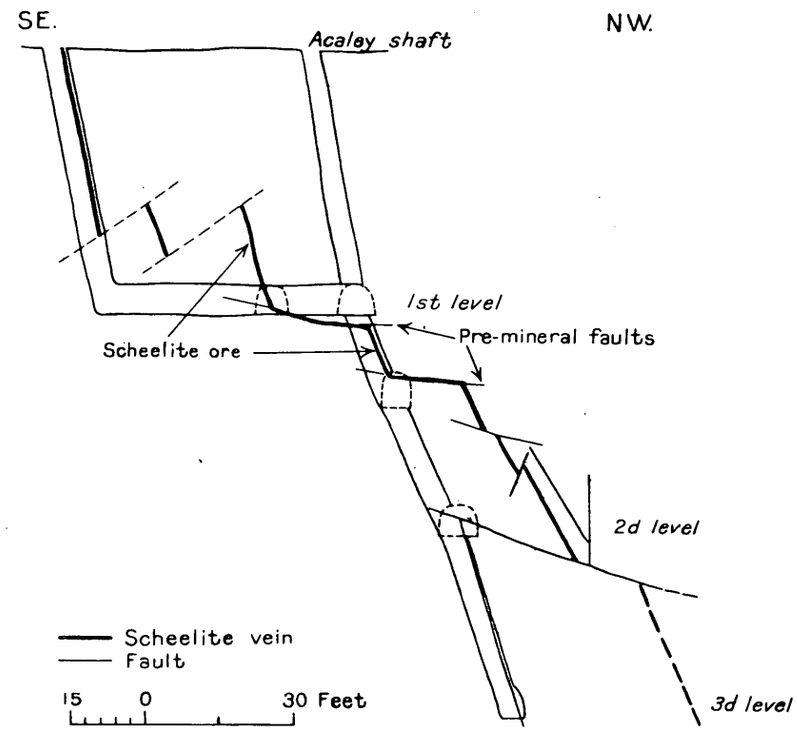

Figure 38.--Section through the Acaley mine.

Goldstone mine.--The Goldstone mine was inaccessible in 1940 and no maps of it exist. Although most of the development was prior to 1914, some additional work was done by lessees in 1937.

one of these veins has been developed on the second and third levels. Much of the mine is now inaccessible, for debris carried by a cloudburst filled the old main shaft several years ago. Since then the third level has been connected with the seventh level of the Union mine through a raise, the fourth level has been started east from the raise, and a new shaft has been started from the surface. It is hoped that productive ore shoots will be found below the third level, for two small quartz-scheelite veins have been discovered on the fourth level and small veins were followed up the Amity raise from the Union mine.

Ore produced from the Amity mine has been very rich, averaging 11.62 percent of WO_3. Ore in some places was several feet thick, for the open stopes on the first level are large.

Acaley mine.--In the Acaley mine the main vein is successively offset northward by gently dipping faults (see fig. 38) along which movement is essentially pre-mineral, for between the offset portions of the main vein these faults contain small veins of slightly crushed quartz and scheelite, not over 1 inch thick. Most of the ore has come from above the first level; no ore has been stoped beneath the second level, where much of the development has been along barren fissures. The shaft is now filled below the second level, but available surveys show that at least 50 feet of crosscutting northwestward would be needed on the third level to intersect projected extensions of the upper ore shoot.

Rainstorm mine.--The Rainstorm mine, developed on three levels, now has no exposed ore. The productive vein, which strikes N. 78° E. and dips 60°-70° N., is cut by two faults 75 feet apart. The western one, intersected in the shaft on the second level, strikes N. 60° E., dips 70°-90° SE., and has an apparent horizontal displacement of about 25 feet, the southeast side having moved northeastward. The other, which has a

highway. The diorite is medium-grained and contains nearly equal amounts of light and dark minerals, the light consisting mainly of plagioclase (andesine) and the dark mainly of hornblende. One thin section shows a little quartz.

Diabase dikes.--Two diabase dikes cut the scheelite veins in the west part of the Union mine. These dikes range in width from 1 foot to 7 feet and persist from the surface to the bottom level, 1,000 feet below. The rock is fine-grained and dark-colored; in thin section it shows laths of labradorite enclosed in interlocking larger grains of augite to form a characteristic diabasic texture. From relations observed by him elsewhere in the Randsburg quadrangle, Hulin [2] has inferred that these dikes are of upper Miocene age.

Miocene sedimentary rocks.--A variable thickness of barren conglomerate and sandstone, which were called the Rosamond series (Miocene) by Hulin, occurs in the Spud Patch area, in the eastern part of the district, where it overlies the quartz monzonite and underlies the tungsten-bearing alluvium. Large closely packed angular fragments of a red granite quite unlike the quartz monzonite are found in shafts and in one small outcrop in the area occupied in this series. In places, the fragments might be taken for parts of a mass of bedrock, but careful examination shows them to be boulders and pebbles in thick beds of gravel, interstratified with other beds that are more clearly sedimentary. Placer miners have recognized the distinctive nature of these beds, which are locally referred to as the Red Mountain flow. They are underlain by light-colored sandstones with occasional beds of conglomerate.

2/ Hulin, C. D., Geology and ore deposits of the Randsburg quadrangle, Calif.: California State Min. Bur. Bull. 95, p. 72, 1925.

The Miocene beds thin rapidly westward. Information from miners indicates that their western limit is a normal fault dipping eastward. Several placer shafts southeast of the large placer dump have been sunk more than 125 feet into this material without reaching quartz monzonite. Unfortunately none of the shafts are now accessible, and most of them are partly filled with water.

Alluvium.--Quaternary alluvium overlies almost all of the district. Nearly half the area is covered with sandy material 1 foot to 4 feet thick formed by the disintegration of the quartz monzonite. The western and southeastern parts of the area mapped are covered with stratified alluvium 5 to 125 feet deep. The alluvium contains many different types of rocks and varying amounts of gold and scheelite, derived in part from the veins of the Stringer district and in part from the Atolia veins.

Structure

The most prominent structural feature of the northern Mojave desert is the Garlock fault, which extends from Tejon Pass northeastward through the Tehachapi Mountains and along the south side of the El Paso Range, from which it has been traced around the Avawatz Mountains near the south end of Death Valley. This fault is the boundary between two structurally and topographically distinct areas--the Basin-and-Range province on the north and the Mojave Desert province on the south. In the Randsburg quadrangle Hulin [3] found that the chief movement on this fault had been horizontal, and he thought the south side had moved east as much as 5 miles. Most of the displace-

3/ Hulin, C. D., op. cit., p. 63, 1925.

In general both ore shoots are roughly V-shaped down the dip. The richest portions of both veins (seventh and eighth levels) occur where the veins dip as low as 40° N. This flattening has probably influenced the deposition of the largest scheelite bodies.

On the seventh level the North and South ore bodies are connected by a vein containing about 1 inch of scheelite ore, but as yet, despite considerable prospecting, no ore shoot has been found in this vein.

There are numerous short crosscuts in the mine, but no long crosscut has been driven in search of ore shoots in parallel structures. Some horizontal diamond-drill holes, probably none more than 200 feet in length, were drilled several years ago from various places in the mine. No positive results were obtained, and no record was found of the number of holes, footage, location, or results.

Scheelite occurs near the surface in several veins north of the Union No. 1 shaft, notably in the veins 325 feet north, 850 feet north (Star No. 1 mine), and 1,640 feet north (Top Notch claim). Part of this north zone could be prospected to good advantage by diamond-drill holes from the lower levels of the Union mine, and the area to the south might also be worth investigating. Surface indications of exposed veins are not promising, but the fact that the South vein ore body did not crop out should be remembered in searching for new ore shoots. Positions of known ore shoots should be taken into account in any prospecting program, for ore shoots in parallel veins are likely to be controlled by the same cross fractures.

Amity mine.--Ore stoped above the third level (130 feet deep) has made the Amity mine the third most productive in the district. Six short veins, including two north-trending ones, have been worked from the surface to the first level, but only

mine is about 180 feet on the fourth level and 50 feet on the tenth level. The width of the ore has ranged from 1 inch to as much as 17 feet. Lenses of nearly pure scheelite 5 to 10 feet thick have been mined from parts of the South vein, which has produced nearly as much ore as all the rest of the district combined.

In the western part of the mine the ore has been cut by two diabase dikes. One of these is very persistent, the other erratic. The persistent dike strikes N. 20° W., dips 79° NE., and ranges in thickness from 2 to 6 feet on different levels. The other dike is mostly 1 or 2 feet thick; it has been found only on the seventh, eighth, and ninth levels. Post-mineral movement along the vein fractures has offset the dikes, the north side moving westward as much as 15 feet.

The two ore shoots in the mine are controlled by cross fractures, two of which have considerable importance. The persistent diabase dike occupies the more westerly of these, but no igneous rock has been injected into the other.

Most of the ore mined has been found between these two fractures, which were active during mineralization as well as later. Presumably they served to relieve stress along the vein in the intermediate area, thus allowing deposition of scheelite from the ore-forming solutions.

The ore shoot in the South vein on the lower four levels of the mine is limited to the west by the persistent diabase dike and to the east by the cross fault (pl. 36). The fourteenth level was never driven westward to the dike. On the tenth level are indications of ore west of the dike, and ore was stoped 190 feet west from a sublevel reached through a winze. No ore has been mined east of the main eastern cross fracture.

ment took place in the Quaternary period, and the fault is still active. When the faulting began is not known, but it may have been as long ago as early Tertiary.

The Rand Mountains, which lie a few miles south of the Garlock fault, are carved from a south-sloping fault block bounded on the north by a normal fault. The range contains many persistent longitudinal fractures older than the frontal fault; some of these are filled with veins that carry tungsten and gold, some are occupied by rhyolite and latite dikes, and some are barren. Other faults of north and northeast strike, some of which are exposed in the Kelly mine at Red Mountain, contain gold and silver ore bodies or dikes.

All of these earlier faults appear to have been formed by regional compression in Cretaceous or early Tertiary time. Even those which are still active probably date from the same period, although their present magnitude is due to more recent stress.

The Atolia district lies 9 miles south of the Garlock fault, on the south slope of the Rand Mountains. With minor exceptions, the tungsten veins here and elsewhere in the Rand Mountains occupy north-dipping faults that strike from N. 75° E. to N. 75° W. The general trend of the belt is northeasterly, parallel to the Garlock fault, and displacement appears to have been mainly horizontal and in the same direction as that on the Garlock fault. The dip of the veins ranges from 45° N. to vertical, those in the east end of the district being steepest. In the Flatiron mine the Spanish vein is nearly vertical, and locally it overturns 85° S. There is no evidence to indicate the amount of pre-mineral displacement along the veins.

Post-scheelite faulting has taken place along the vein fractures and in cross faults. A measure of the post-mineral faulting along the vein is found in the Union mine, where a

diabase dike which cuts through the scheelite has been offset 15 feet along the vein. None of the many cross faults have large displacements; the horizontal shift rarely amounts to 25 feet and usually is much less. Between offset parts of veins these faults commonly contain dragged quartz and scheelite, which can be followed to find the offset vein. Some of the cross faults have been slightly mineralized, indicating that mineralization continued after they were formed.

The Paradox No. 3 vein is structurally exceptional in that it strikes northwest, dips southwest, and is broken by many small faults (see fig. 39).

The main St. Elmo vein, which contains no scheelite but has produced gold, strikes N. 40 E. and dips southeast. Although the northeast extension of the vein is deeply buried under alluvium, the eastern limit of the Miocene sedimentary rocks in the Spud Patch area coincides with the projected strike. The sharp change in grade of the bedrock channels in this zone suggests faulting along this line.

Many other mineralized fractures occur in the southern part of the Atolia district (for example, the Paymaster and Senator veins), but none of these contain scheelite. The vein matter consists mainly of carbonates and in some veins is reported to carry gold.

LODE DEPOSITS

The tungsten-bearing fissure veins at Atolia contain the largest bodies of high-grade scheelite discovered in the United States, and possibly in the world. They occur in a series of roughly parallel, locally branching fractures. With the exception of the Papoose vein, the original discovery in the district, all the veins are concealed under the widespread detrital cover.

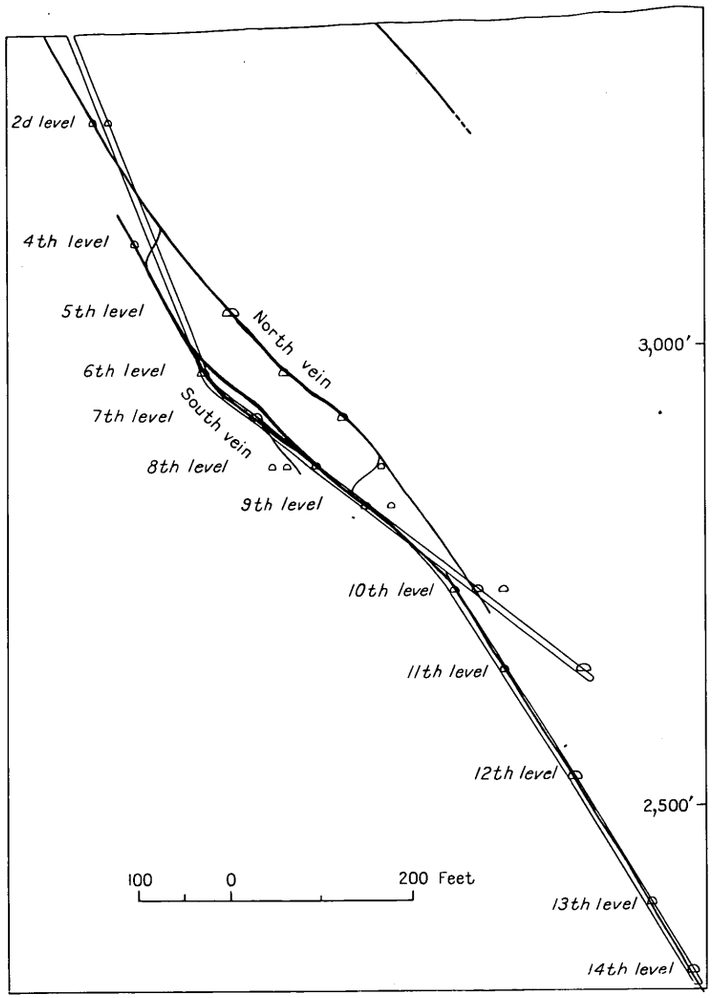

Figure 37.--Section through the Union No. 1 shaft.

Atolia Mining Co.

The Atolia Mining Co. owns 55 patented claims and 1 unpatented claim (the Cora Dee). From these claims 95 percent of the scheelite produced in the district has been mined. The Union mine has been most productive, followed in order by the Papoose, Amity, Par and Spanish, and Flatiron mines.

Union mine.--The Union mine, which has been the chief producer in the district, was worked to a vertical depth of 1,021 feet. The mine is developed through one main inclined shaft (see fig. 37). This shaft branches between the ninth and tenth levels, the steeper branch extending to the bottom of the mine on the fourteenth level and the flatter branch extending to the eleventh level. Of the six shafts that have been sunk only the No. 1 main shaft and the Old No. 1 shaft (now abandoned) extend below the fourth level. The main shaft has recently been retimbered, and the main haulageways have been kept open, but parts of the older workings of the mine are inaccessible. In February 1940 water stood between the eleventh and twelfth levels at an altitude of 2,585 feet, 753 feet below the collar of the shaft. The volume of water was not large enough to constitute a serious mining problem in the bottom levels.

The ore produced at the Union mine has come from two veins--the North vein, which carried scheelite at the surface, and the South vein, which was barren at the surface but very productive below the fourth level. The two veins intersect in the eastern part of the property and converge downward. The maximum horizontal separation between ore shoots in the western part of the

The main production has come from a few veins occupying a narrow belt that crosses the area from east to west (pl. 35). Pockets of scheelite have been mined in the Stringer district, northwest of Atolia, from veins chiefly valuable for their gold content, and some scheelite has been recovered at the Yellow Aster mine, in the Randsburg district; but no detailed study has been made of these occurrences, for they are outside the area mapped and none of them promises large production. On a claim about half a mile north of the area mapped (shaft coordinates about 4,130 N., 10,430 W. of the Papoose shaft) C. E. Irwin discovered, in 1939, a small lenticular body of high-grade ore with a maximum thickness of about 10 inches. The vein, which dips steeply north and has been followed down for 90 feet, has probably produced several tons of concentrate. Other bodies may lie undiscovered between this property and the known Atolia veins.

The known portion of the main productive belt at Atolia extends about 2 miles along the strike of the veins, the limiting coordinates (pl. 35) being about 7,200 W. and 2,700 E. The two southernmost occurrences are at the I Guess shaft (3,950 S.), south of the Union mine, and at the Federal and Wedge Fraction shafts (2,100 S.). Parallel veins carrying small amounts of scheelite are distributed northwestward into the Stringer district, the northern limits of which lie about 2½ miles northwest of the area represented on the map.

Both ends of the principal belt are covered, the west end by alluvium more than 125 feet thick, the east end by alluvium and by Miocene beds. The west end of the district has been extensively prospected along the strike of the ore zone in search of continuations beyond the Atolia Mining Co.'s property. Crosscuts from vertical shafts sunk through the alluvium have not found any scheelite. The location of the east limit of the

251029 O—40——3

scheelite mineralization has not definitely been proved by crosscuts, but no ore has been found east of the central portion of the Osdick claims, although several shafts have been sunk into the bedrock farther east.

Mineralogy

The mineral composition of the ores is simple. Scheelite is the only ore mineral. The gangue consists of quartz, carbonates (calcite, ankerite, dolomite, and siderite), and sporadic pyrite, stibnite, and cinnabar. Ores from the west end of the district contain considerable phosphorus, probably derived from attached pieces of the quartz monzonite, which contains apatite. No phosphate mineral has been identified in the veins themselves. At least one of the scheelite veins, that in the Rainstorm mine, contained a pocket of gold ore.[4/] Some other veins in the district, such as the St. Elmo veins, are gold-bearing but carry no scheelite.

It is possible for one thoroughly acquainted with the ores of the district to distinguish ore from different mines at sight. In general, ore from the Union mine has much fine-grained brownish quartz in the gangue and contains considerable carbonate. Ore from the Flatiron and Par mines has less gangue, it contains very little carbonate and less quartz than the Union ore, and the quartz is milky and rather coarsely crystalline.

Scheelite ($CaWO_4$) occurs in veinlets and forms massive solid chunks in the larger veins. The pure mineral is white, but it is usually admixed with more or less quartz and calcite. It is coarse-grained and some masses show large cleavage surfaces.

4/ Hulin, C. D., op. cit., p. 73, 1925.

Osdick group									
Big Ben	141	133	(6)	274	190	1	185	464
Skylark	640	95	(1)	735	174	1	167	909
Federal group								
Federal	427	45	(1)	472	287	2	169	759
Monitor	204	.....	.....	204	188	1	180	392
Ready Cash	.....	.....	.....	.....	80	1	79	80
West of Paradox No. 1	10	.....	.....	10	95	1	90	105
Miscellaneous								
I Guess	40	.....	.....	40	77	1	75	117
Manxman	205	60	(3)	265	191	2	97	456
O'Neill	.....	327	(1)	327	155	2	85	482
Redondo Pete	1/ 300	1/ 500	(1)	1/ 800	1/ 500	1	1/ 500	1/ 1,300
Sun	137	406	(2)	543	176	1	176	719
Top Notch	110	40	(1)	150	269	1	165	419
Total	41,107	9,096	(241)	50,203	11,551	71	1,021	61,754

1/ Estimated.

Mine workings, in feet, in the Atolia district

MINE	Level workings				Shafts			Total workings
	Drifts	Crosscuts		Total	Total	No.	Maximum depth	
		Total	No.					
Atolia Mining Co.								
Acaley	405	269	8	674	191	2	137	865
Amity	1,675	228	10	1,903	908	7	410	2,811
Attila	100	.....	.....	100	50	1	44	150
Elder lease	352	155	2	507	177	1	136	684
Flatiron	3,968	1,238	33	5,206	834	6	262	6,040
Goldstone	1/ 623	.....	.....	1/ 623	160	1	.....	1/ 783
Little Papoose	407	102	2	509	130	1	127	639
Mahood	386	25	2	411	120	1	100	531
Moonstone No. 1	110	.....	.....	110	93	1	81	203
Moonstone No. 2	125	.....	.....	125	77	1	66	202
Neglected Fraction	149	.....	.....	149	164	2	75	313
Papoose	2,791	1,195	(21)	3,986	632	3	361	4,618
Papoose No. 5	517	235	(6)	752	130	1	124	882
Papoose (east edge of mill)	110	.....	.....	110	70	1	57	180
Par and Spanish	3,101	285	(22)	3,386	477	3	210	3,863
Paradox No. 1	572	.....	.....	572	330	2	167	902
Paradox No. 3	1,291	480	(14)	1,771	384	4	167	2,155
Paradox (miscellaneous)	208	287	(5)	495	398	4	113	893
Piute No. 1	247	20	(1)	267	167	1	163	434
Rainstorm	604	.....	.....	604	244	2	141	848
Star No. 1	293	.....	.....	293	138	1	88	431
Star No. 2	240	.....	.....	240	131	2	78	371
Union	20,289	2,951	(86)	23,240	3,037	7	1,021	26,277
Viewpoint	330	20	1	350	127	1	116	477

No euhedral crystals have been found. F. L. Hess, in 1917, obtained a single specimen weighing a ton or more from the Million Dollar stope of the Union mine and sent it to the National Museum, Washington, D. C.[5]

Quartz of several varieties is abundant in the veins. A fine-grained brownish quartz of chalcedonic appearance is common in some of the western ore bodies but is absent to the east, where a white, milky quartz is present. Small veins of comb quartz formed subsequent to the scheelite are found throughout the district. Many of the quartz veins in the western and central parts of the district contain no scheelite, but scheelite nearly everywhere accompanies quartz in the Flatiron and Par mines, to the east.

Calcite and the other carbonates are especially abundant as gangue minerals in the central and western ore bodies and in the barren veins north and south of the productive belt.

Pyrite is a very minor constituent of the ores, but it is abundant in the adjoining altered parts of the country rock. In the upper levels of the mines oxidation has destroyed much of this pyrite, leaving a limonite stain.

Stibnite (Sb_2S_3) is found locally in the central part of the field in veins as much as 6 inches thick, which also carry quartz and scheelite. It is fairly abundant in the Rainstorm mine and in the Viewpoint No. 1 mine.

Cinnabar (HgS) is rare in the district; probably not more than a few hundred pounds of it has been found. The writers did not find any cinnabar, although it is said to have been found in tungsten ore from several places, notably from a vein discovered while digging for the foundations of the mill ore

5/ Mineral Resources U. S., 1917, part 1, p. 940.

bins near the Papoose shaft, from shallow workings in the central part of the field southwest of the Acaley mine, from the upper levels of the Union mine, and from placer workings in the Spud Patch.

Rock alteration

The quartz monzonite adjoining all the veins has been altered by hot ascending waters for distances ranging from a few inches to several feet from the walls. The most extensive alteration is found in the Union mine and in the central part of the district. In the Flatiron and Par mines the alteration is relatively slight. The altered rock is impregnated with sericite, pyrite, kaolin (?) and a little chlorite. Where not weathered it is usually greenish-gray in color, but it is commonly brownish near the surface owing to the oxidation of pyrite. At the surface it is commonly white because of the leaching of iron oxide and the corresponding prominence of kaolin, which may have been formed in part by surface waters.

Origin

The tungsten veins have been deposited from hot solutions, which rose from deep sources through fault fissures into regions in which the temperature and pressure were suitable for deposition of the scheelite and associated minerals. The veins are fissure fillings with little replacement of the country rock.

There is no conclusive evidence as to the geologic age in which these veins were formed. Hulin considered the mineralization to be connected with the nearby late Miocene volcanism. The ore bodies are certainly later than the late Jurassic (?) quartz monzonite and probably pre-upper Miocene, as they are cut, in the Union mine, by diabase dikes that are probably of

area will probably average more than one-fourth pound of scheelite. A rough estimate of the total placer material present in the area mapped, excluding the westernmost deep channel through the Sun shaft, indicates about 28,000,000 cubic yards, of which 11,000,000 is in the Spud Patch. The conservative estimate of one-fourth pound of scheelite per yard implies that the total of placer scheelite in the district amounts to 280,000 units.

These figures do not take into account the placers northwest and southeast of the area mapped, which might materially increase the total. It is said that the lowest gold value found in prospecting between the Stringer district and Cuddeback Lake is $0.35 per yard and that some scheelite occurs with the gold almost everywhere in the intervening area.

It is evident that at present prices the placer material of the district is unworkable for scheelite alone but inasmuch as gold is commonly present in promising quantity much of the scheelite may be profitably recovered as a byproduct when the problem of saving the very fine gold with little water is solved.

MINES

In the following mine descriptions properties are grouped according to ownership. Although most of the productive mines are controlled by the Atolia Mining Co., surrounding claims are held singly or in groups by other companies and individuals. Among the larger groups of adjoining claims are those of the Atolia Rand Placers, Inc., Osdick, Federal mine, American Gold & Tungsten Corporation, Blackhawk Mining Co., and St. Elmo groups (see pl. 37).

The amount of development in each of the mines about which the writers have information is shown in the table on pages 230 and 231. There is about 10 miles of drifts and crosscuts and 2½ miles of shafts and raises in the district. Approximately 18 percent of the level workings is crosscuts.

per yard in the pilot mill were: gold, $0.73; scheelite, $0.60, or about 1 pound at the reported price of $12.50 per unit. About $0.59 was left in the tailings. The large plant made much poorer recovery, and the prominent piles of tailings from the placer operations south of the Union mine may be reworked in the future.

The writers have little specific information as to the physical nature of the gold and scheelite in the placer deposits. Recovery of gold from placer operations in the western area has been far below the values determined by fire assay, and this low recovery is probably due to the finely divided state of the material. Most of the scheelite, on the contrary, is rather coarse, especially in the Spud Patch, where single pieces, called "spuds" by the miners, weighing as much as 115 pounds have been found. The only available size analysis of scheelite was made by the Pacific Placers Engineering Co. on samples cut from test holes between the Union mine and the Stringer district. Screen tests of concentrates from 13 samples showed that an average of 74 percent of the scheelite was larger than 35 mesh.

The scarcity and high cost of water have hampered placer operations, especially the recovery of fine gold. Dry placer methods for recovering the gold have been tried for many years, but on the whole results have been discouraging. Water was shipped into the district by railroad for many years, until the Atolia Mining Co. sank wells near Cuddeback Lake and began pumping water for mill use. The distance pumped is about 7 miles and the vertical lift about 650 feet.

Reserves

Past operations and sampling programs show that the district contains large quantities of alluvium carrying 1 pound to 1.5 pounds of scheelite per cubic yard and that all the placer

upper Miocene age. The texture of the ores suggests deposition near the surface, which implies a long time interval between the intrusion of the quartz monzonite and the emplacement of the veins--an interval long enough to allow the stripping off of most of the rock that originally covered the intrusive mass.

Grade of ore

The average grade of ore mined and milled by the Atolia Mining Co. in any one year since 1909 has ranged from 1 percent to 15 percent of WO_3 and has averaged 4.14 percent of WO_3. Some of the ore assayed 60 to 70 percent of WO_3 and was sacked in the mine and shipped without milling. At present the grade of ore milled is kept at about 2 percent of WO_3.

Ore shoots

Scheelite ore bodies occur as shoots in the veins. These shoots are broadest near the surface and narrow downward. Most of them are nearly vertical, but some of the eastern shoots pitch eastward parallel to cross faults (see pl. 36).

The largest ore shoot discovered, that in the South vein of the Union mine, did not reach the surface. It has been mined on all the levels from the third to the fourteenth, a vertical distance of 850 feet. Its maximum exposed breadth is 1,260 feet, and its pitch length is 1,080 feet as far as the bottom of the mine, which has not yet reached the bottom of the shoot. The other shoots in the district have been much smaller; their average stope lengths probably do not exceed 100 feet. The maximum pitch length in many ore shoots is roughly equal to the stope length.

The thickness of ore mined by the companies has ranged from a few inches to 17 feet. The maximum was reached in one part of the South vein of the Union mine. The ore bodies in

the Union mine have been the widest, those in the eastern part of the district being thinner but of high grade. The Papoose vein was 5 feet thick at the surface. The Paradox veins have locally contained 2 to 5 feet of high-grade scheelite. Lessees can operate successfully upon very narrow stringers of high-grade scheelite, veins as little as 1 inch thick having been profitably mined. Where conditions permit, they blast the waste from narrow veins before they mine them, in order to prevent dilution of ore.

About three times as much ore has been mined in the western part of the district (Union and Amity mines) as in the eastern part (Papoose, Flatiron, Par, and Paradox mines). Production from the central part has been insignificant.

The scheelite veins are broken in many places by cross faults, few of which are mineralized. As the ore shoots appear to be localized near these faults, it seems probable that incipient cross fractures existed prior to mineralization and were a major factor in controlling ore deposition. Continued stress after the formation of the scheelite bodies caused post-mineral movement along these cross fractures, and most of the displacement now visible is due to this later movement.

Although the cross faults have been chiefly influential in localizing the ore bodies, certain features of the vein fractures themselves have been locally important. In the Flatiron, Spanish, and Par mines the vein walls swell and converge in plan, the centers of successive rolls commonly being about 10 feet apart. These rolls have been important as channelways and as sites of deposition. A flattening of the vein between the sixth and eighth levels appears to have localized the richest ore body in the Union mine (see fig. 37).

ings. Operations were restricted to areas where the alluvium was less than 25 feet deep, so that it did not include the deeper channels. Recovery in the plant averaged roughly 1.5 pounds of scheelite per cubic yard; no attempt was made to save the gold. The alluvium beneath the old Papoose mill tailings was left, but it may be worked when the tailings are removed.

Information on gold content in the main Spud Patch is lacking, but an area sampled by M. S. Draper on the Wedge, Trade Dollar Extension, Wonder, and Old Glory claims, on the south edge of the Spud Patch, is reported to have indicated 2,069,400 cubic yards with an average gold content of $0.71 per yard. Part of this area was successfully worked for scheelite during the last war.

In the western placer area, between coordinates 3,000 W. and 7,000 W., gold and scheelite are concentrated in relatively deep and narrow channels, some of which are so narrow that their exploitation by large machines is difficult.

A broad deep channel near the western border of the area mapped was probably excavated by a stream heading about 3 miles north, in the Stringer district, where veins carrying both gold and scheelite have been worked. This channel is completely filled with alluvial material or "wash", and there is no available information on its gold or tungsten content.

In the placer area near the Union mine the scheelite content is less, and no very rich streaks like those in the Spud Patch are known. Accurate figures on results of sampling by Atolia Rand Placers, Inc., were not available to the writers. The sampling and subsequent operations demonstrated, however, that the narrow subsurface channels discovered in the drilling campaign contained much higher concentrations of gold and scheelite than the interstream areas. Reported recoveries [8]

8/ Salt Lake Mining Review, p. 11, Sept. 4, 1934.

There are two distinct placer areas in the district: the Spud Patch, extending southeast from the Papoose mine, and the western area, extending from the Stringer district southward past the Union mine. The Spud Patch is the richer in scheelite and has provided most of the past placer output of that mineral. The alluvium of both belts contains gold.

The Spud Patch channels trend east and formerly headed farther west than they do now. They show a marked steepening at the west edge of the Spud Patch. This steepening, coupled with other evidence, suggests a buried fault, the movement along which disturbed the drainage and caused thick accumulation in the Spud Patch.

The Spud Patch was worked intensively by lessees during the last war and has been worked intermittently since then by drift mines through shafts that reach productive beds at depths ranging from 5 to 60 feet. Hess [7] wrote 25 years ago--

> In general, the gravel is sufficiently cemented by carbonate of lime (caliche) to allow drifting without timbering, though some thin beds are loose. Miners estimated that at $20 a unit a bed 3 feet thick and 55 feet below the surface would yield wages--that is, about $4 to $4.50 a day--if it produced 15 pounds of concentrate carrying 63 percent of WO_3 per cubic yard.

Not more than 20 percent of the shafts are shown on the map (pl. 35). Inasmuch as the deeper shafts are now caved or filled with water, it was impossible to obtain much first-hand information as to bedrock conditions in this area. The scheelite occurs at several horizons and is most highly concentrated along the east-trending channels. At no place has scheelite been found within or below the Miocene sedimentary rocks, which underlie much of the alluvium of the Spud Patch.

In 1926 the Atolia Mining Co. constructed a placer plant in the Spud Patch to wash alluvium stripped from part of the area between the Papoose mine and the present dump of placer tail-

7/ Hess, F. L., Mineral Resources U. S., 1916, part 1, p. 791.

Possibilities of ore at depth

In the course of development it has been found that ore shoots throughout the field become leaner and smaller with depth. However, the ore shoot in the South vein of the Union mine still contains low-grade ore on the bottom level at a depth of 1,021 feet. Below the ninth level the ore bodies have been erratic and progressively leaner, but it is reported that on the fourteenth level, now under water, the ore was more uniform in character, although still of low grade.

In the Redondo Pete mine, now inaccessible, a small ore streak is reported to have been developed on the 500-foot level but to have supplied very little ore.

No other shaft in the district has been sunk deeper than 300 feet. No major ore bodies have been developed between the Amity mine and the Papoose mine, in which the ore pinched out at a depth of 190 feet. In the Flatiron mine ore was present a short distance above the fourth level, which is 262 feet below the collar of the shaft and is now under water. The Paradox mines have not been worked deeper than 167 feet.

Sufficient work to determine whether or not ore continues downward has not been done in the eastern and central parts of the field, but the richness of the Papoose and Flatiron ore bodies makes future exploration at depth seem inevitable in the east. There is no obvious reason for assuming absence of deeper ore in this zone.

Reserves

At present there is practically no ore in sight in the mines of the Atolia district, partly because the lenticular character of the high-grade ore shoots makes impracticable the systematic blocking out of reserves in advance of mining. For

example, despite reports [6] by former operators that the Flatiron mine had been exhausted prior to 1915 and that the Par mine had no ore below the third level or to the east or west, renewed operations on the Flatiron lease (including the Spanish and Par mines) during the 6 years 1934-40 have produced nearly $1,000,000 worth of tungsten, although probably at no time has there been more than a few hundred tons of ore in sight. The only proved reserve in the district is in the Atolia Mining Co.'s mill tailings, which are now being re-treated by flotation.

The Atolia district is not exhausted, but the easily discovered and richest ore bodies have probably been mined. Future production can be expected from the extension of present ore bodies in depth, new ore shoots in known veins, and ore shoots in veins yet to be discovered.

With prices at $25 to $35 per unit, annual underground production might equal that of 1937--roughly 20,000 units--for several years. The Flatiron, Papoose, Paradox, and Amity mines have the best chance for future production and will probably provide the bulk of the output. Inasmuch as these properties have not been developed in depth, it is likely that some of the ore shoots can be followed downward successfully, particularly in the Flatiron and Amity mines.

Diamond drilling is worth considering in the search for parallel ore shoots at depth, but it would require close-spaced holes because of the lenticular character of the ore bodies. In times of high prices lessees could probably produce considerable scheelite at Atolia by surface prospect trenches cut by bulldozers where bedrock conditions permit.

Reserves in the placer deposits are discussed in the section on placers.

6/ Hulin, C. D., op. cit., p. 127, 1925.

PLACER DEPOSITS

Distribution

The alluvium that blankets the Atolia district contains a large quantity of scheelite--a fact that is important in considering the tungsten reserves of the area. Although the scheelite content of the alluvium is very uneven and over much of the district is too small for profitable extraction at any probable peacetime prices, the presence of placer gold in relatively large quantities may make it possible to extract tungsten as a byproduct. The placers in the western part of the field were worked in the past primarily for gold; whereas those in the eastern half were worked for tungsten and the gold was not saved.

The thickness of the alluvium has been measured in many shafts and pits, especially in those of the Atolia Rand Placers, Inc. Few measurements unfortunately are available in the Spud Patch, where most of the placer mining has been done, for no logs were kept there and the bedrock is now covered in most of the openings. However, enough measurements are available throughout the district to serve as the basis of a contour map of the bedrock surface (pl. 35); and from this map some of the factors that have controlled the deposition of the placers can be determined.

The bedrock surface has a greater relief than the present surface and is furrowed by many sharply incised stream channels. The incisions of these streams were undoubtedly caused by temporary and probably short-lived rejuvenation, which could have been caused by one or more of several factors, among which are movement along the northeast-striking fault mentioned on page 216, a change in the drainage from the main Mojave Basin to the nearer Cuddeback Lake Basin, and possible climatic changes.

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WASHINGTON, D. C.

R. E. Adams, Administrative Officer, DMEA
Attention: Docket & Control Branch
Iron and Ferro-Alloy Division, DMEA

June 12, 1952

Removal of docket from active file
Docket No. DMA 1636X - Tungsten
Surcease Mining Company
San Bernardino County, California

At the applicant's request, the above-noted application has been withdrawn. We are transmitting herewith the docket for your files.

Agd

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

Attachment

LMcClure

cc: Admn. Reading File
Docket
G. C. Selfridge

EXPLORATION

Mr. J.W. Hoefling, President
Surcease Mining Company
214 30th Street
Sacramento, California

Re: Docket No. DMA 1636X - Tungsten
lode and placer claims - Stolin
Mining District
San Bernardino County, California

Dear Mr. Hoefling:

Recently we reviewed the subject docket and noted that your application for exploration assistance on the above-noted claims was dated May 30, 1951. We would like to clear all of the old DMA applications from our active files.

On October 31, 1951, you wrote us that further studies were being made concerning an exploration program in stages. On March 7, 1952, in response to our letter of February 29, 1952, you wrote us that your exploration plans had not crystallized to a point to permit an intelligent decision and asked that your application be held in abeyance until further notice. On March 13, 1952, we answered you and stated that we hoped to hear from you in the near future. Almost another three months have passed.

As your application is now a year old and you still have no definite plan for exploration, we suggest that you either request that the application be withdrawn or submit the information requested from you last year. In case that you would file a new application, I can assure you that no time would be lost in its processing.

We wish to cooperate with you in the matter of allowing ample time, but if the needed information has not been received by June 30, 1952, we will then remove the application from the active file and consider the matter closed.

Sincerely yours,

E. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

GCSelfridge:ls 5/28/52
Copy to: Docket
Admn. Reading File
Field Team, Reg. 3
G. C. Selfridge
R. W. Sebhen, USBM
D. M. Lemmon, USGS

MAR 13 1952

Mr. J. W. Hoefling, President
Surcease Mining Company
214 30th Street
Sacramento, California

Re: Docket No. DMA 1636 - Tungsten
Lode and placer claims
Atolia Mining District
San Bernardino County, California

Dear Mr. Hoefling:

Thank you for your letter of March 10, 1952, in which you inform us of your desire that your application be held in abeyance until further notice. We shall do this and hope that we may hear from you in the near future.

Sincerely yours,

C. O. Mittenderf

Acting Administrator
Defense Minerals Exploration
Administration

GCSelfridge:lc
3/11/52

cc: Adm. Pending File
Docket
Field Team, Region 3
R. W. Geehan, USGS
D. M. Lemmon, USGS
G. C. Selfridge

400's

Mr. J. W. Hoefling
Surcease Mining Company
214 30th Street
Sacramento 16, California

Re: Docket No. DMA 1636X - Tungsten
Lode and Placer Claims
Molia Mining District
San Bernardino County, California

Dear Mr. Hoefling:

A review of our file of the subject docket shows that under date of October 31, 1951, you advised us by letter that you were considering the possibility of a program by steps or stages and further that you were holding your application in abeyance until it could be set forth more definitely in total plan. Since your letter of October 31, 1951, we have had no further word from you relative to this matter.

Will you please advise us as to the progress of your plans in respect to your application or advise us whether or not you desire to proceed with the application.

Sincerely yours,

G. C. Selfridge

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

GGGentry:ls
~~GCSelfridge:rlr~~
2/28/52

cc: Docket
Admn. Reading File
Field Team, Region 3
R. W. Geehan, GSPM
D. M. Lemmon, GSGS
G. G. Gentry
G. C. Selfridge

Code 400 file

Aug 20, 1951

Mr. J. W. Roefling, President
Surcease Mining Company
214-30th Street
Sacramento 16, California

In reply please refer to
DMA 1636

Dear Mr. Roefling:

This is in reply to your letter of August 10, 1951, asking questions in connection with the exploration loan program.

These are answered in the same order as they were asked.

1. The word "exploration" means straight exploration as shown in section 7(a) of Mineral Order 5, copy of which is enclosed. This is for the search for ore only. It must not be confused with "development" which means blocking out ore to prepare it for production.

2. The Government lien would apply only to the specific mining claims included in the project.

3. The pay back royalties are confined to the ore which is discovered as the result of the project.

4. Yes.

5. The lien against the property definitely terminates in ten years.

6. The existence of one project does not prohibit the inauguration of a second project on the same block of ground if, in the opinion of the examining engineers, it is found desirable. If two separate projects are in force, you are correct in assuming a, b, and c.

Very truly yours,

George B. Holderer

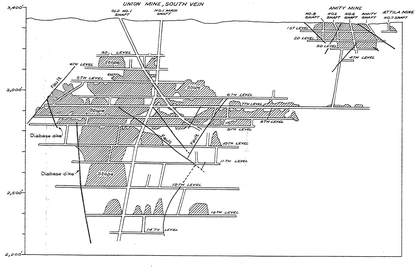
George B. Holderer
Chief, Tungsten Branch

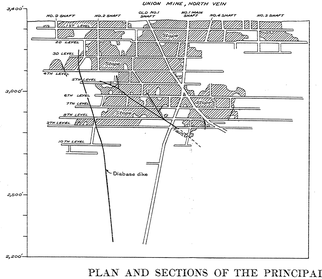
Enclosures 2

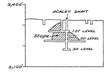
CC: Adm. Reading File
Reports & Records Unit
Mr. Holderer
Files

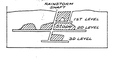
GBHolderer:dgs
August 16, 1951

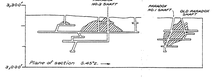
CLAIM MAP OF THE ATOLIA MINING DISTRICT, SAN BERNARDINO AND KERN COUNTIES, CALIFORNIA

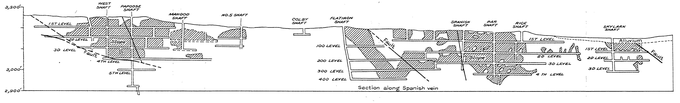


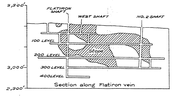








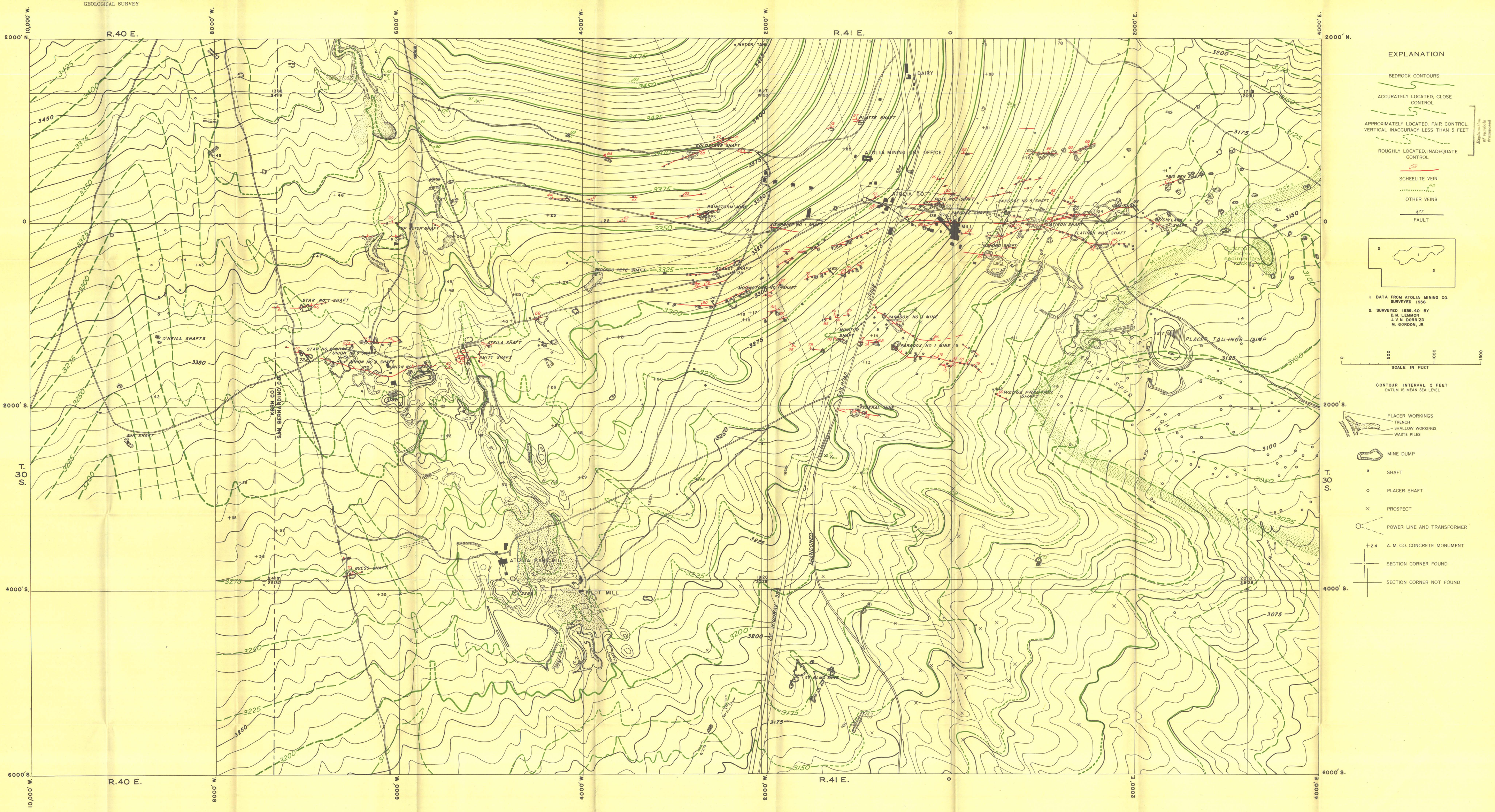




PLAN AND SECTIONS OF THE PRINCIPAL MINES OF THE ATOLIA MINING DISTRICT, CALIFORNIA

200 0 1,000 Feet

1940



EXPLANATION

BEDROCK CONTOURS

ACCURATELY LOCATED, CLOSE CONTROL

APPROXIMATELY LOCATED, FAIR CONTROL, VERTICAL INACCURACY LESS THAN 5 FEET

ROUGHLY LOCATED, INADEQUATE CONTROL

Explanation of symbols on underground

SCHEELITE VEIN

OTHER VEINS

FAULT

1. DATA FROM ATOLIA MINING CO. SURVEYED 1936
2. SURVEYED 1939-40 BY D. M. LEMMON J. V. N. DORR 2D M. GORDON, JR.

SCALE IN FEET

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

PLACER WORKINGS
TRENCH
SHALLOW WORKINGS
WASTE PILES

MINE DUMP

SHAFT

PLACER SHAFT

PROSPECT

POWER LINE AND TRANSFORMER

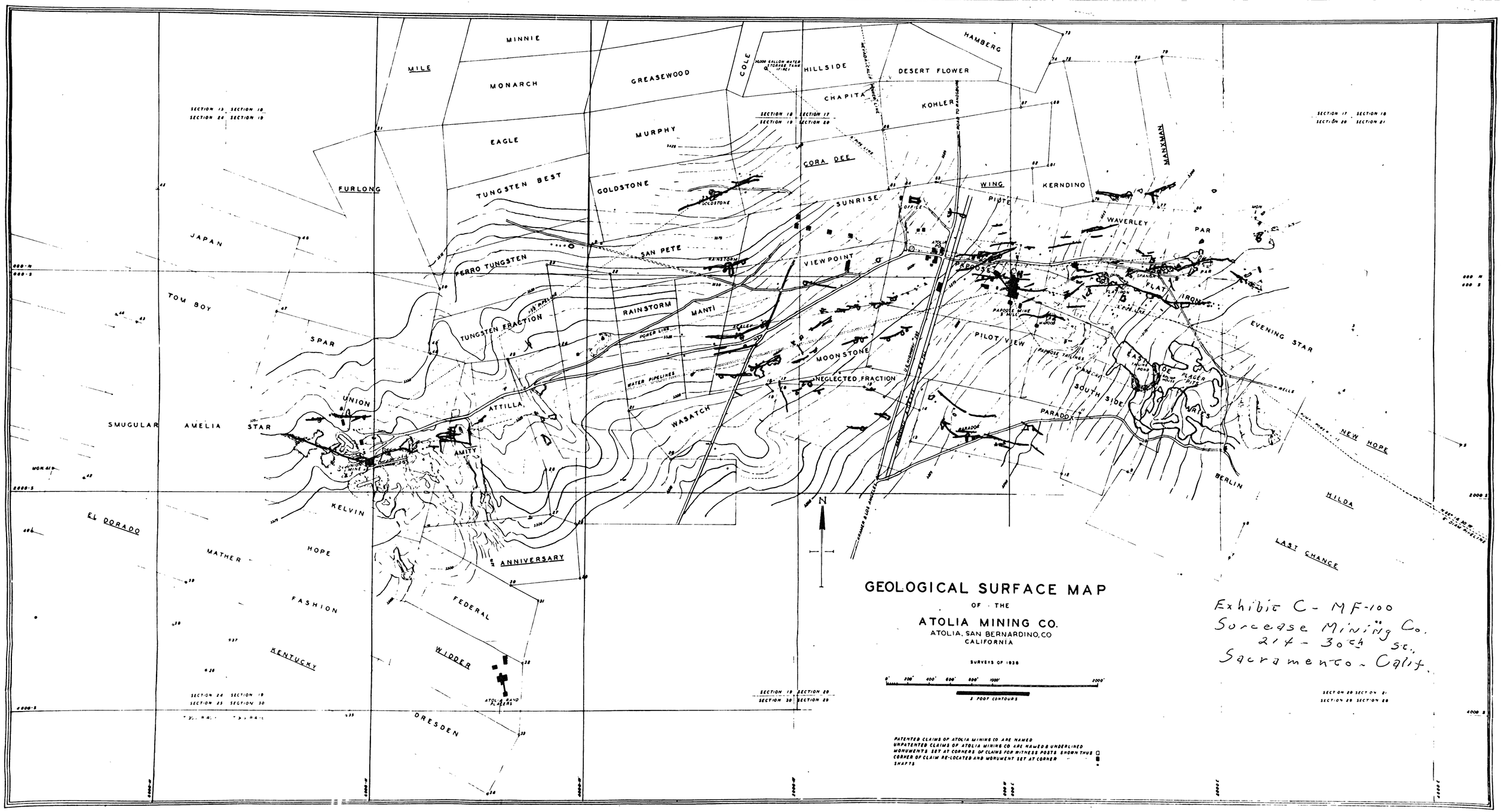
+24 A. M. CO. CONCRETE MONUMENT

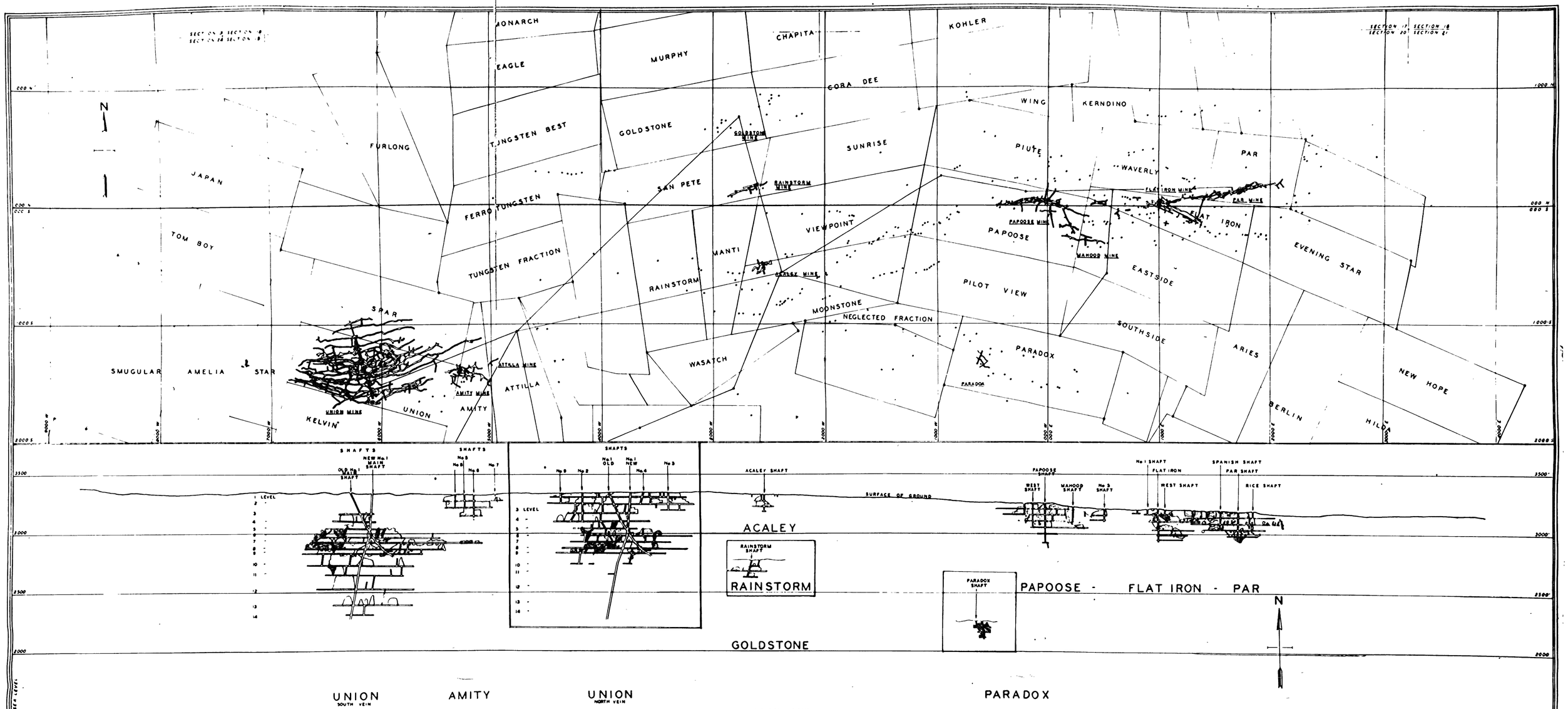
SECTION CORNER FOUND

SECTION CORNER NOT FOUND

GEOLOGIC MAP OF THE ATOLIA MINING DISTRICT, CALIFORNIA

1940


GEOLOGICAL SURFACE MAP
OF THE
ATOLIA MINING CO.
ATOLIA, SAN BERNARDINO, CO
CALIFORNIA
SURVEYS OF 1936
5 FOOT CONTOURS
PATENTED CLAIMS OF ATOLIA MINING CO ARE NAMED
UNPATENTED CLAIMS OF ATOLIA MINING CO ARE NAMED & UNDERLINED
MONUMENTS SET AT CORNERS OF CLAIMS FOR WITNESS POSTS SHOWN THUS
CORNER OF CLAIM RE-LOCATED AND MONUMENT SET AT CORNER
SHAFTS
MINNIE
MILE
MONARCH
GREASEWOOD
COLE
HILLSIDE
DESERT FLOWER
HAMBERG
CHAPITA
KOHLER
EAGLE
MURPHY
CORA DEE
FURLONG
TUNGSTEN BEST
GOLDSTONE
SUNRISE
WING
PIUTE
KERNDINO
WAVERLEY
PAR
JAPAN
SAN PETE
FERRO TUNGSTEN
VIEWPOINT
PAPOOSE
FLAT IRON
TOM BOY
TUNGSTEN FRACTION
RAINSTORM
MANTI
SPAR
MOONSTONE
PILOT VIEW
EVENING STAR
NEGLECTED FRACTION
EASTSIDE
SOUTH SIDE
PARADOX
UNION
ATTILLA
WASATCH
SMUGULAR
AMELIA
STAR
AMITY
NEW HOPE
BERLIN
HILDA
KELVIN
EL DORADO
ANNIVERSARY
MATHER
HOPE
FASHION
FEDERAL
KENTUCKY
WIDDER
DRESDEN
LAST CHANCE
N
Exhibit C - MF-100
Sorcease Mining Co.
214 - 30th St.
Sacramento - Calif.



PLAN AND
LONGITUDINAL SECTION
OF

ATOLIA MINES

ATOLIA MINING CO.

ATOLIA, SAN BERNARDINO COUNTY
CALIFORNIA

SCALE 1" = [redacted]' DEC. 31, 1937

0 200' 400' 600' 800' 1000'

ORE STOPED PRIOR TO 1937

ORE STOPED DURING 1937

Exhibit D - MF-100
Surcease Mining Co.
214 - 30th St.
Sacramento, Calif.

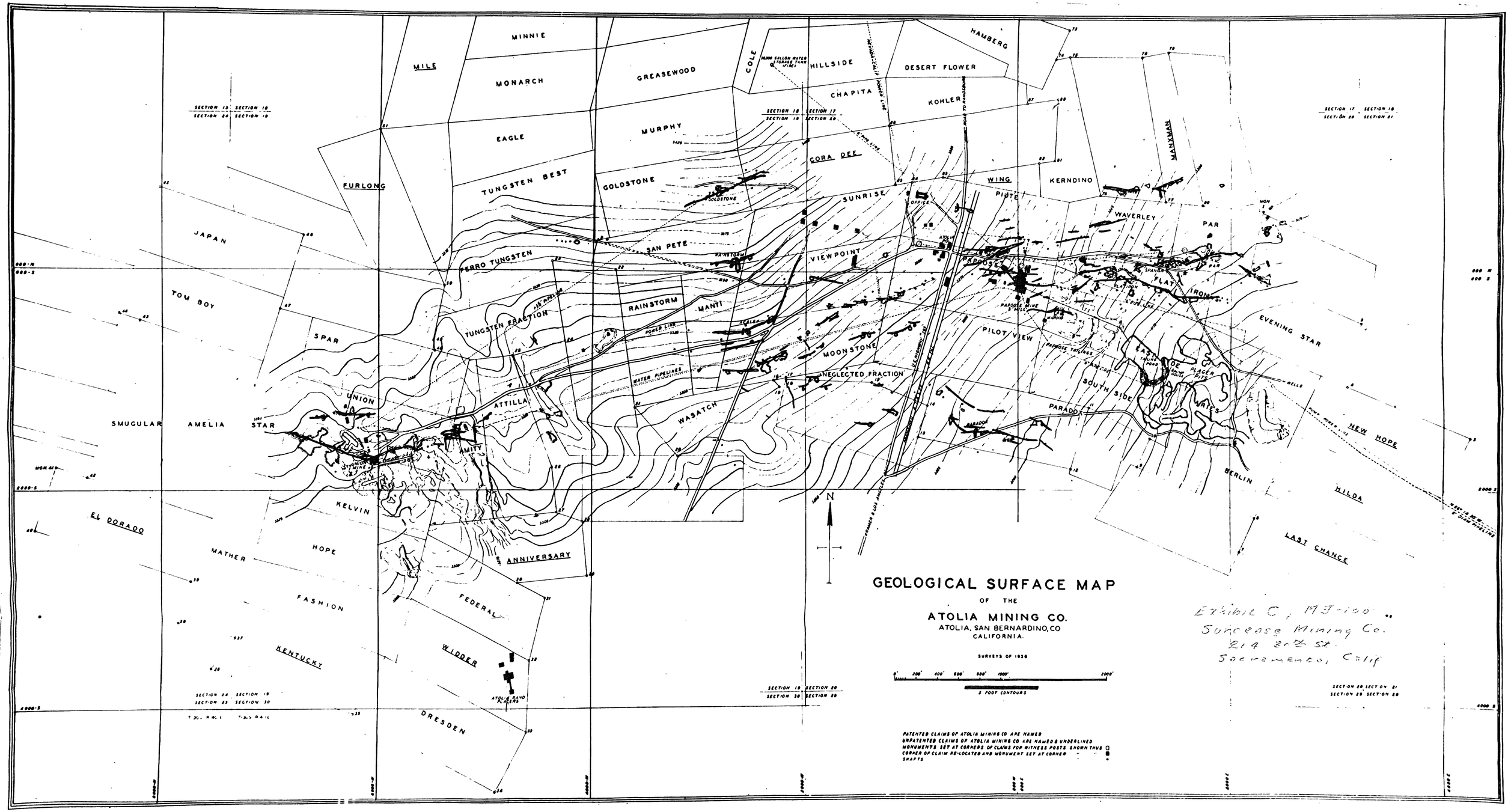
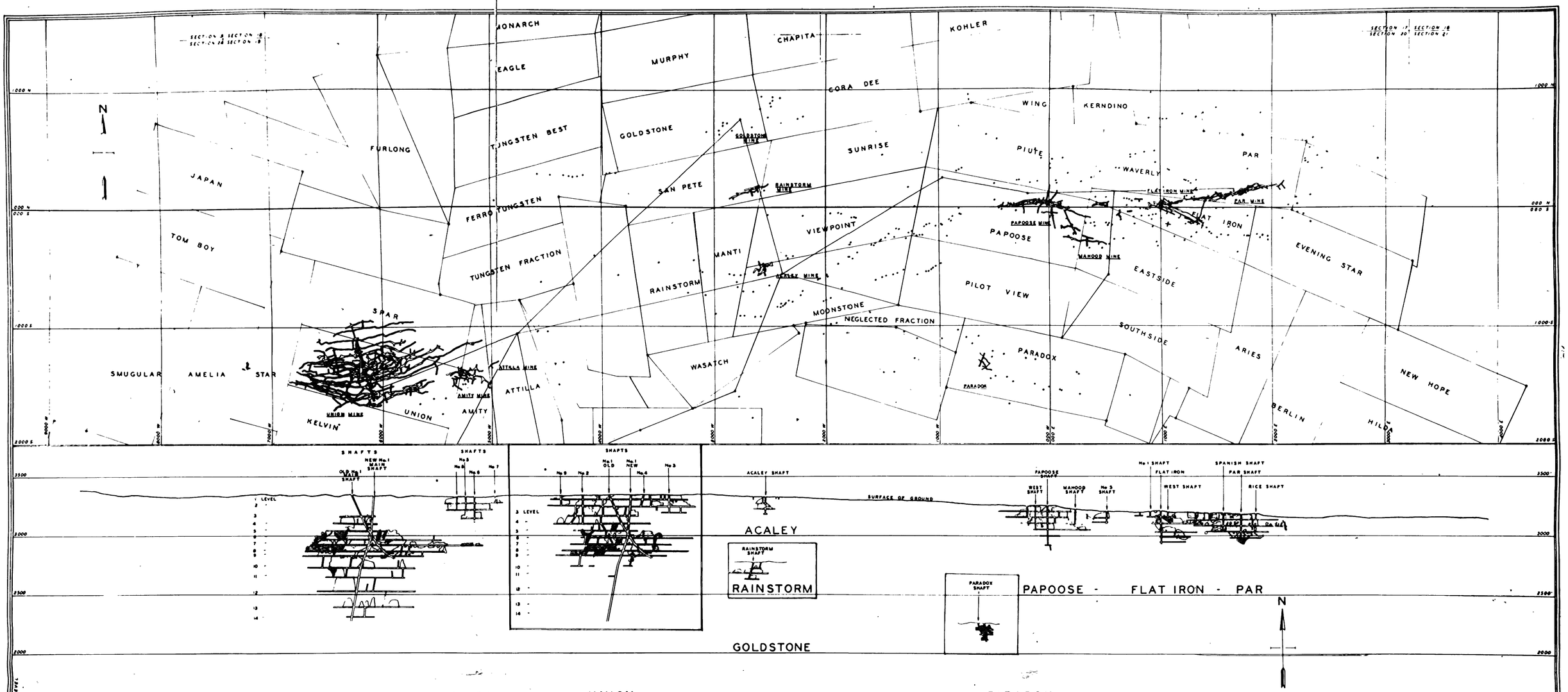


Exhibit C, MJ-100
Suncrest Mining Co.
214 30th St.
Sacramento, Calif



PLAN AND
LONGITUDINAL SECTION
OF

ATOLIA MINES

ATOLIA MINING CO.

ATOLIA, SAN BERNARDINO COUNTY
CALIFORNIA

SCALE 1" = [redacted]' DEC. 31, 1937

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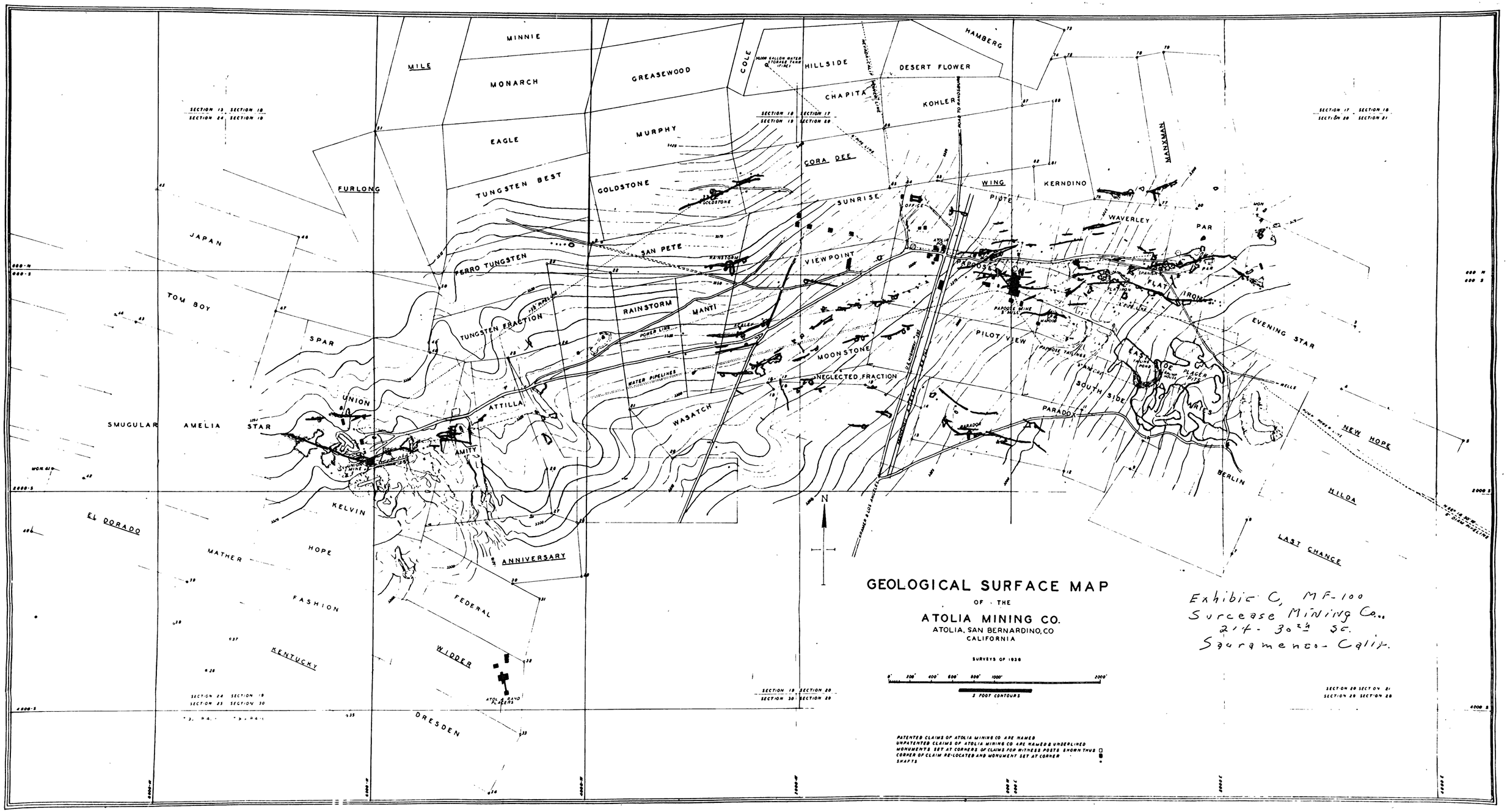
ORE STOPED PRIOR TO 1937

ORE STOPED DURING 1937

Exhibit D, MF-100

Surcease Mining Co.
214 30th St.
Sacramento, Calif.


GEOLOGICAL SURFACE MAP
OF THE
ATOLIA MINING CO.
ATOLIA, SAN BERNARDINO, CO
CALIFORNIA
SURVEYS OF 1938
0' 200' 400' 600' 800' 1000' 2000'
2 FOOT CONTOURS
PATENTED CLAIMS OF ATOLIA MINING CO ARE NAMED
UNPATENTED CLAIMS OF ATOLIA MINING CO ARE NAMED & UNDERLINED
MONUMENTS SET AT CORNERS OF CLAIMS FOR WITNESS POSTS SHOWN THUS
CORNER OF CLAIM RE-LOCATED AND MONUMENT SET AT CORNER
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EL DORADO
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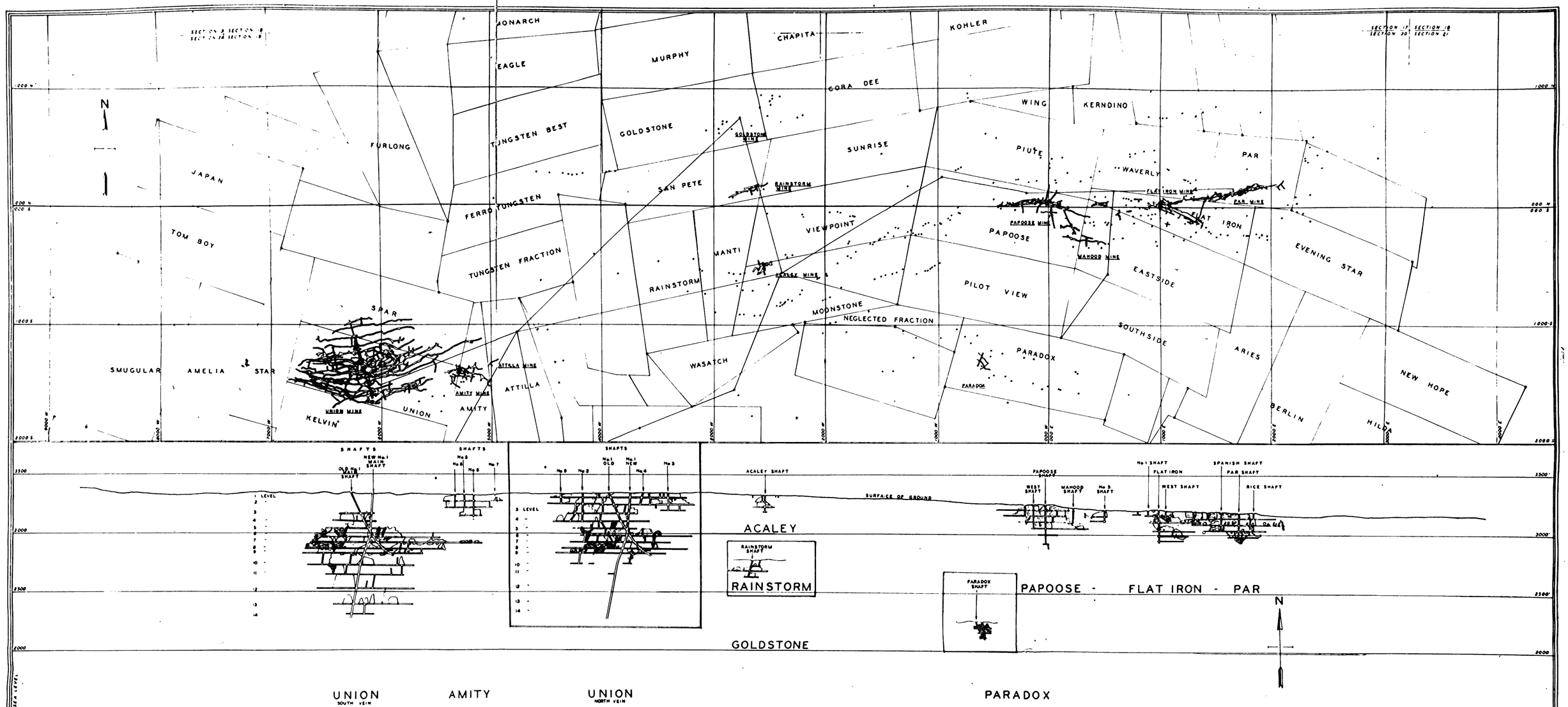
HOPE
FASHION
FEDERAL
KENTUCKY
WIDDER
DRESDEN
LAST CHANCE
ROAD TO RANDSBURG
ATOLIA SAND PLACERS
Exhibit C, MF-100
Surcease Mining Co.
214-30 ½ SC.
Sacramento-Calif.



PLAN AND
LONGITUDINAL SECTION
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ATOLIA MINES

ATOLIA MINING CO.

ATOLIA, SAN BERNARDINO COUNTY
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