400

JUL 25 1955

406

Western Manganese Corporation
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

Re: Docket No. DMEA 3737 - Manganese
Sunset group
Plumas County, California

Gentlemen:

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

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

Careful study of all our information, although noting the occurrence of manganese mineralization on your property, indicates to us that the probability of disclosing minable manganese ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Program.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: Docket
Code 400
Oper. Committee
Adm. Read. File
Thor Kiilsgaard, USGS
Gilbert DeRuff, USBM
Field Team, Reg. 2-Reno

FARutledge/ls
7/19/55

July 19, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $50,000.00
Docket No. DMEA 3737 - Manganese
Western Manganese Corporation
Sunset group
Plumas County, California

The denial of the subject application is recommended by this Division based on the following information:

(1) The applicant proposed to explore the Sunset group of 16 mining claims in the Seneca Mining District, Plumas County, California. Previously this same property was the object of requested assistance under Docket DMA 335, W. J. McMillan, in the amount of $75,000, of which $45,000 was for exploration (denied March 10, 1951), and Docket DMEA 2837, Sunset Mining Corporation, in the amount of $26,973.36 (denied June 25, 1953).

(2) The ore bodies are lenses, veinlets, and nodules of manganese-bearing material containing from a few pounds to several hundred tons of mineralized material each concentrated along the hanging wall side of tear-shaped jasper bodies. The jasper lenses (ranging from a few feet to 100 feet in width, from a few tens of feet to 400 feet in length, and extending down dip for over 50 feet and probably as much as several hundred feet) occur in a cherty horizon near the top of the Arlington formation which is composed mainly of shales. Three tear-shaped lenses of jasper crop out in this area, one on each of the Sunset No. 2, Sunset No. 3, and Sunset Extension claims. The primary manganese minerals are rhodonite and bementite. Some secondary oxides occur with the cherts, and nodules of psilomelane are found in the detritus covering the cherts and in narrow clay bands interbedded with the cherts. The primary ore is silicious and of low grade.

(3) The Utah Construction Company produced some 248 tons of ore containing 18.8 percent manganese in 1949 from these deposits before abandoning their operation.

(4) All production by the present applicant has been stockpiled (approximately 750 tons).

(5) Considerable shallow excavation work has been done on the property since the previous applications for assistance were denied. Additional shallow exploration as proposed offers little possibility of discovering new minable manganese ore bodies because the manganese mineralization is confined to the tear-shaped jasper lenses which are well exposed. The jasper bodies being more resistant to weathering processes than the enclosing formations have prominent outcrops. It is improbable, therefore, that other jasper bodies which may be mineralized, but are not exposed in the area to be explored, would be discovered by the shallow trenches of the proposed program.

(6) The examining field team recommends denial of the subject application.

(7) The Field Team agrees with the recommendation set forth under (6) above.

(8) The Commodity Division of the U. S. Geological Survey and the Commodity Division of the Bureau of Mines concur in the denial.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

cc: Docket
Code 400
Adm. Read. File
Oper. Committee

FARutledge/ls

IN REPLY REFER TO:

400

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

RECEIVED
JUL 1 8 1955

July 18, 1955

Re: DMEA 3737
Western Manganese Corp.
Sunset Group
Plumas Co., Calif.
$50,000 - Manganese

Copy retained 400

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report

The small production record of this old property, and of the Plumas County manganese belt fail to support the application for extensive trenching and drilling.

The conclusions of the examiners are justified by the results of the examination.

I concur with the denial recommendation of the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/18/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
G. DeHuff, 3521

400

APR 13 1955

Western Manganese Corporation
c/o L. M. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

Re: Docket No. DMEA 3737 - Manganese
Summit group
Plumas County, California

Gentlemen:

The above-docketed application for exploration assistance has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. Spangler Bishop, Executive Officer, DMEA Field Team, Region II, 3605 Boyne Avenue, Reno, Nevada, for a field examination of the property.

Any assistance that you can render the members of the Field Team will be appreciated.

Sincerely yours,

G. O. Mittendorf

Administrator

FARgtledge:foc
4-8-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
Messrs. DeHuff, USBM
Kiilsgaard, USGS

400

APR 13 1955

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

Re: Docket No. DMEA 3737 - Manganese
Western Manganese Corporation
Sunset group
Fresno County, California

Dear Mr. Richer:

A prior application for exploration assistance, Docket No. DMEA 2637, on a part of the referenced property was denied June 25, 1953. However, because of the good results reported for the additional exploration that has subsequently been completed by the owners, a re-examination by the Field Team is requested.

Two copies of a relevant memorandum dated April 6, 1955, by R. D. Tyson, Geological Survey, are enclosed for your information.

In the event the Field Team considers an exploration program is warranted, it would be appreciated if a claim map is submitted to indicate the location of all the claims listed under 3(f) of the application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosure

FARutledge:fec
4-8-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
Messrs. DeBaff, USBM
Kiilsgaard, USGS

APPROVED:

J. H. Hedges

Director, Bureau of Mines

Thor H. Kiilsgaard

Director, Geological Survey

400

IN REPLY REFER TO:

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

April 6, 1955

Re: DMEA-3737
Western Manganese
Corp.
Sunset group
Plumas Co., Calif.
$50,000 - Manganese

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application

The present application concerns the same property as DMEA-2837, which I understand was denied in 1953.

The general conclusions, as stated by Max Crittenden in his memo to Mr. Selfridge, dated January 8, 1953, still hold. The chances of finding large quantities of mill ore is not good.

As some additional work appears to have been done on the property since DMEA-2837, however, I suggest a field examination should be made.

R. D. Trace

RDTrace:hlm
G-4/6/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeRuff, 3523 Interior

402

dmea 3737

1605 Evans Avenue
Reno, Nevada

March 22, 1955

Memorandum

To: Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application, Western Manganese Corporation, L. H. Seagrave, President, 840 General Petroleum Building, 612 South Flower Street, Los Angeles 17, California

Attached are three sets of MF-103 Application for Aid forms relative to above subject. The fourth set has been retained in our files. Also attached is a letter from the owners giving their consent to lien to the present lessee's. We will have to get this consent to lien on our formal forms if a contract is later contemplated.

There was a previous application on this property "Docket No. 2837", and the request for financial assistance was denied July 25, 1953. In the meantime, considerably additional exploration work has been done by the owners, so I believe that a re-examination by the Field Team may be in order.

S. Ricker

Attachments

SRicker:gh
cc: H. C. Miller
R. M. Smith
File

400

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

RECEIVED
JUL 12 1955

1605 Evans Avenue
Reno, Nevada

July 8, 1955

Memorandum

WSM

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-3737 - Manganese
Western Manganese Corporation
Sunset Group
Plumas County, California

In response to your letter of April 13, 1955 requesting a field examination of above subject property, we are attaching four copies of a report by J. D. Warne of the Bureau of Mines and H. K. Stager of the Geological Survey in which they recommend that the application for DMEA exploration aid be denied.

It would appear that the additional work done since the former applications for aid were denied did not disclose any data that adds to the potential value of the property. Roscoe Smith and I are in full agreement with the recommendation set forth in the report.

S. Ricker

Attach.
SRicker:gh
cc: R. M. Smith
File

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
JUL 22 1955

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

DMEA-3737 - Manganese
Western Manganese Corporation
Sunset group
Plumas County, California

J. D. Warne
Mining Engineer
U. S. Bureau of Mines

H. K. Stager
Geologist
U. S. Geological Survey

July 7, 1955

CONTENTS

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Introduction	1
Conclusions and recommendations	2
Location, accessibility, and local resources	2
History and production	3
Property and ownership	4
Development	4
General geology	6
Ore deposits	6
Sampling	7
Ore reserves	8
Proposed exploration	8

ILLUSTRATIONS

Figure	Description
1	Location map
2	Claim map of surveyed claims, Sunset group, Plumas County, California
3	Geologic sketch maps of Pits Nos. 1, 2, and 3 Sunset Manganese mine, Plumas County, California

INTRODUCTION

The Western Manganese Corporation, 840 General Petroleum Building, 612 South Flower Street, Los Angeles 17, California applied for Government assistance in a $50,000 program under the Defense Minerals Exploration Administration, docket number 3737, to explore for manganese on the Sunset group of claims, Plumas County, California. The applicants wish to explore several manganese exposures on their claims with a program consisting of trenches and drilling.

A field examination was requested by the Operating Committee, and was made by J. D. Warne of the Bureau of Mines and H. K. Stager and R. M. Smith of the Geological Survey on June 8, 1955, accompanied by Mr. Frank Smith, one of the applicants.

The open pits and surface exposures were inspected and compared with the maps furnished by the company. Three samples were taken by the examiners to check the grade of the ore exposed.

An application for an exploration loan was made in 1950 and denied on the basis of the information available on the property at that time. After additional exploratory work, a second application was made under docket No. DMEA-2837 in June 1953 and the application was again denied. The final proposal consists of 25,000 cubic yards of trenching in 10 large and 50 small trenches and about 3,300 feet of rotary drilling in about 30 holes. The estimated total cost of the proposed program

is $50,000 of which the Government's share would be $25,000.

CONCLUSIONS AND RECOMMENDATIONS

The Sunset mine deposit contains a small tonnage of manganese minerals ore in veinlets, nodules, and lenses associated with jasper.

Considerable shallow excavation work has been done on the property since previous loan applications in 1950 and 1953; but no additional information relative to the size and grade of the deposit was disclosed. Additional shallow exploration work, which is proposed, offers little possibility of discovering new minable manganese ore bodies. The probable tonnage and grade of the deposit can be estimated from present exposures and do not justify the proposed program.

It is recommended that Government assistance under the DMEA program be denied.

LOCATION, ACCESSIBILITY, AND LOCAL RESOURCES

The Sunset group of manganese claims are in secs. 2 and 3, T. 26 N., R. 8 E., and in sec. 34, T. 27 N., R. 8 E., six miles west of Greenville, Plumas County, California (fig. 1).

The claims are accessible by automobile during the summer months by traveling 6 miles from Greenville northwestward along California Highway No. 89 and 5.5 miles southward along a graveled Plumas National Forest road to the mine.

The claims are within an upland area at about 6,000 feet in elevation where timber for mining purposes is plentiful. Water must

be pumped or hauled from springs a distance of about 0.5 mile to the mine. A limited supply of mine labor is available in the area. The nearest source of electric power is at Lake Almanor, 4 miles north of the property. Mine supplies are obtainable locally or from Reno, Nevada, 120 miles distant.

HISTORY AND PRODUCTION

Manganese was discovered in this area in 1917, and four or five carloads of sorted high-grade oxide ore are reported to have been shipped, but no records of this production are available. Some bulldozer stripping and test pitting work was performed during 1947, but no ore was produced.

During 1949-1950 the Utah Construction Company excavated three open pits on the property and shipped 248 tons of ore averaging 18.8 percent manganese, 37.6 percent silica, and 15.5 percent iron.

In September 1953, the main portion of the mine property was leased by Mr. F. A. Smith of Berkeley, California and Mr. T. L. Nye of Reno, Nevada, who later assigned the lease to the Western Manganese Corporation (the applicant) in July 1954. About 300 tons of low grade ore has been stockpiled by this company, and about 15 tons of manganese concentrates has been extracted from other ore recently mined. A small mill was recently erected by present operators adjacent to the Western Pacific Railroad at Canyon Dam, about 6 miles northeast of

the mine property. No ore shipments have been made by the present operators.

PROPERTY AND OWNERSHIP

Sixteen unpatented mining claims comprising the Sunset Group are owned by Mr. W. J. McMillan and Alice McMillan, 427 LaRue Avenue, Reno, Nevada. Recording data and a property map (Map No. 2) are furnished with the application. A lease to Frank A. Smith and T. L. Nye includes eight of these claims which were assigned to the Western Manganese Corp. A claim map covering the main claims where exploration is proposed is shown on figure 2.

The applicants are believed to be sufficiently experienced in mining, in possession of adequate equipment, and to be financially able to perform an exploration program such as is proposed. However, the mode and extent of proposed exploration work is not considered judicious.

DEVELOPMENT

A 15 by 15 foot tool shed is the only structure existing on the property. Equipment now at the mine is listed as follows:

Excavation equipment:

1 3/4-yard Northwest shovel
1 3/4-yard P. & H. dragline
1 Eimco mucking machine, Model 12B

Compressors:

1 205 c.f.m. Ingersoll Rand
1 125 c.f.m. Yeagers

Trucks:

1 5-yard dump G.M.C.
1 7-yard dump Ford (new)
1 3/4-ton pickup G.M.C.
2 3/4-ton pickup Dodge

Bulldozers:

1 Allis Chalmers, AC-14
1 Oliver OC-18 (rented)

Miscellaneous:

1 Hobart Arc welder, 300 kw
4 Swede drills with legs
1 Skagit hoist, double drum 2 speed

Mine workings consist of three open pits. Pit No. 1 on the Sunset claim is about 200 feet in length and averages 10 to 20 feet in depth. A 10-foot width of low grade manganese ore is exposed near the south end of this pit. Pit No. 2 on the Sunset No. 1 claim is irregular in shape and varys from 30 to 150 feet wide, with a maximum depth of 25 feet. A 15-foot inaccessible shaft was sunk near the north end of this pit. No ore is stated to have been encountered at the bottom of this shaft. Pit No. 3 on the Sunset No. 3 claim is 200 feet in length, 15 to 75 feet wide and averages about 15 feet in depth. Two shallow drift adits were driven from the southern end of this pit into a low hill along the strike of the manganese mineralized zone. These adits which were superimposed upon each other are now only partially accessible and are reported to have been from 35 to 55 feet in length.

The claim map (Map No. 2) accompanying the application shows the locations of the various pits on the property.

GENERAL GEOLOGY

The Sunset group of claims is in an area of moderate relief near the north end of the Sierra Nevada. The surface is covered by slope wash and dense vegetation with few outcrops. The rocks exposed in the vicinity of the mine are chiefly shales and are probably in the upper member of the Arlington formation, which is part of the Lower Calaveras Group of Carboniferous age.

The shale beds strike N. 45° W. and dip from 30° to 60° SW. In a cherty horizon near the top of the Arlington formation, the shales contain a series of lenses of red jasper. These range from a few feet to 100 feet in width, from a few tens of feet to 400 feet in length, and extend down dip for over 50 feet and probably as much as several hundred feet. They are elongate along the strike of the enclosing shale beds.

Three tear-shaped lenses of jasper crop out, one on each of three Sunset claims.

ORE DEPOSITS

The ore bodies are lenses, veinlets, and nodules of manganese-bearing material containing from a few pounds to several hundred tons of ore each concentrated along the hanging wall side of tear-shaped

jasper bodies. The largest lens mined was about 20 feet long, 30 feet high, and 8 feet thick and contained about 400 tons of ore that averaged about 20 percent manganese. Three of these ore bodies have been found and mined on the Sunset claims over a strike length of about 4,500 feet (figs. 2 & 3).

The manganese minerals are pyrolusite, psilomelane, rhodonite, and bementite. Gangue minerals are jasper, chert, hematite, limonite, quartz, and several clays.

About 1,200 tons of ore has been mined from the property with an estimated average grade of about 20 percent manganese. Of this tonnage 248 tons was shipped to U.S. Steel at Geneva, Utah and contained 18.8 percent manganese, 37.6 percent silica, and 15.5 percent iron. Several hundred tons of high grade is reported to have been produced during World War I but no record of tonnage or grade is available. About 750 tons of ore is presently stockpiled at the mine and mill.

SAMPLING

Analysis of three samples taken at the time of this examination from locations shown in figure 3 are as follows:

Sample No.	%, Mn	Description
1	34.5	Specimen of highest grade Mn nodule ore taken from east wall of lower adit, Sunset No. 3 claim, Pit No. 3.
2	9.1	Grab sample of low grade Mn ore remaining at south end of Pit No. 2.
3	12.5	Grab; low grade ore remaining in Pit No. 1.

ORE RESERVES

Except for a few tons of manganese-bearing material exposed as thin lenses and nodules in the sides and bottoms of the open pits, there are no measured or indicated ore reserves on the Sunset claims. Reserves equivalent in tonnage and grade to the ore mined, or about 1,000 tons of ore with an average grade of about 20 percent manganese, is inferred. These reserves are on the Sunset No. 2, and Sunset Extension claims along the hanging wall sides of the jasper bodies exposed in pits No. 2 and 3 (figs. 2 & 3).

PROPOSED EXPLORATION

The applicants have proposed an exploration program consisting of:

1. The excavation of 10 trenches about 500 feet apart, 200 feet long, 4 feet wide, and 20 feet deep.

2. The excavation of 50 trenches, between the trenches proposed under (1), each 100 feet long, 4 feet wide, and 15 feet deep.

3. The drilling of 30 rotary drill holes about 100 feet deep in the faverable areas discovered by (1) and (2).

This work would be confined to the area between open pits Nos. 1 and 3 on the Sunset, Sunset Nos. 1, 2, and 3 and Sunset Extension claims to explore for other manganese ore bodies between the ones that are now known. They estimated the cost of the work would be $50,000.

The manganese ore bodies that are the target of the proposed exploration are confined to the tear-shaped jasper lenses in the chert bed that crops out through the area of the claims. These jasper bodies are resistant to weathering processes and result in prominent outcrops. It is improbable that there are other jasper bodies that do not crop out in the area to be explored which would be discovered by the shallow trenches of the proposed program.

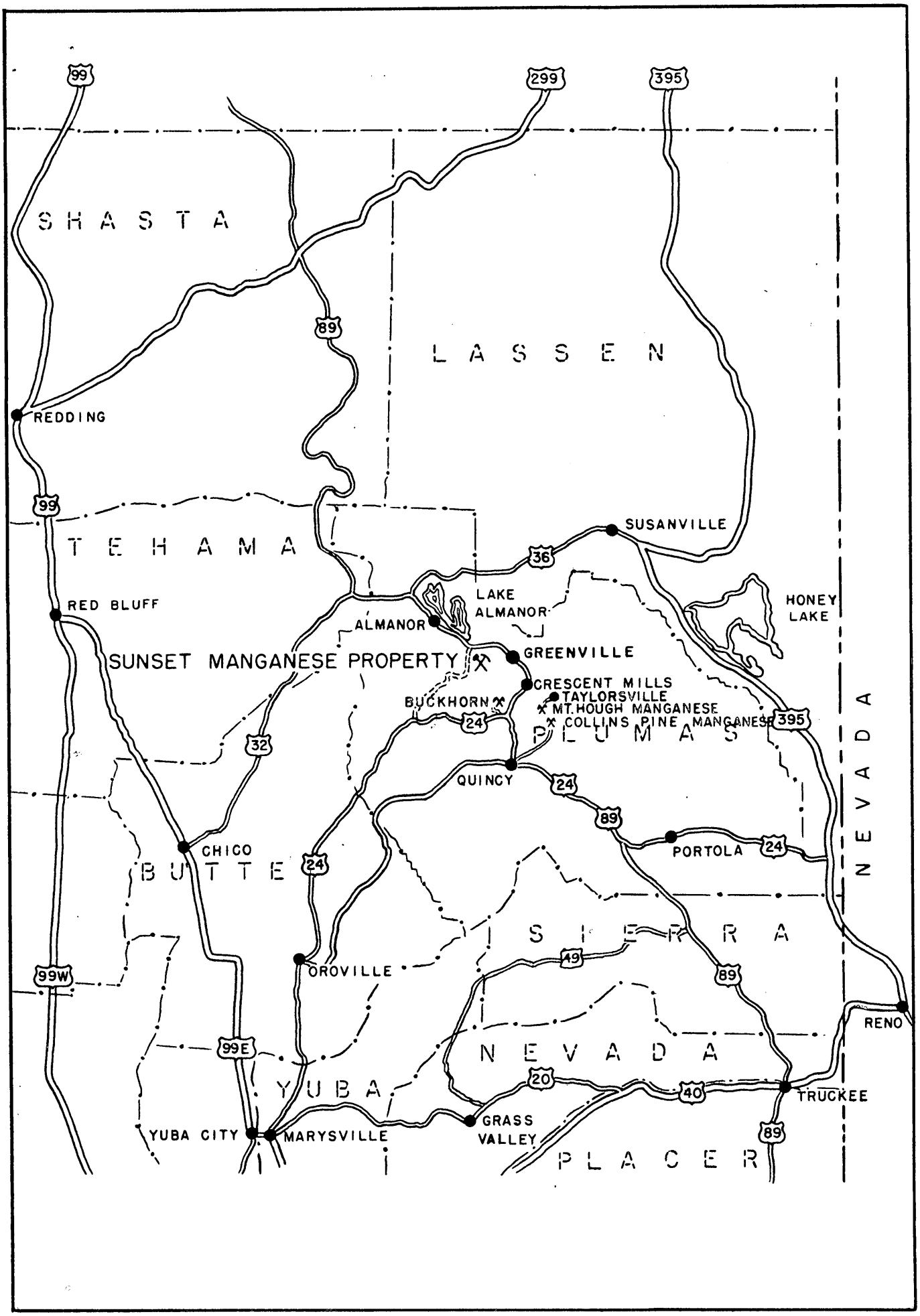
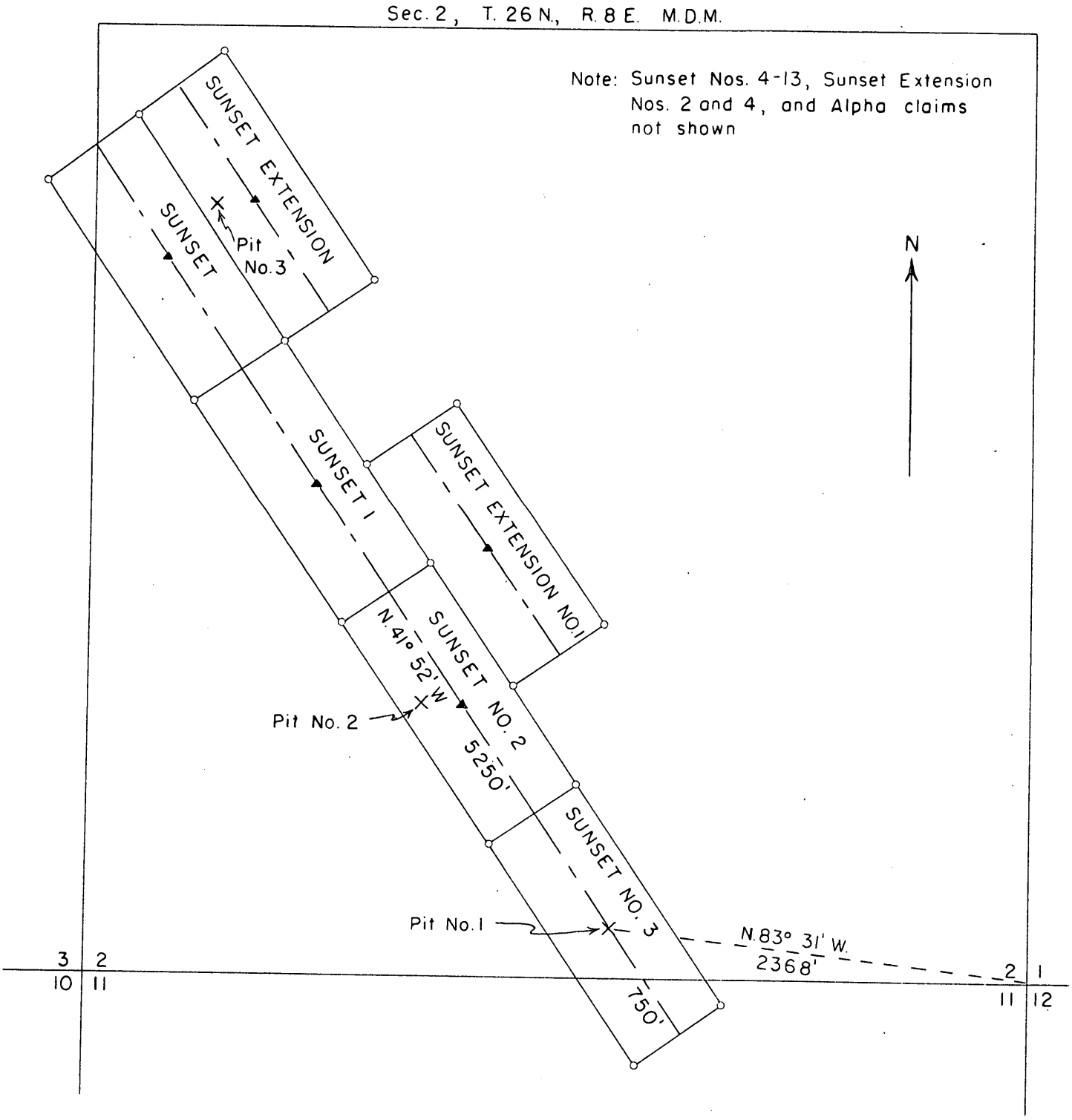


Figure 1.- Location map.

RECEIVED
JUL 12 1955

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA 3737
(MANGANESE)



CLAIM MAP OF SURVEYED CLAIMS, SUNSET GROUP
PLUMAS COUNTY, CALIFORNIA

800 0 800 1600 Feet

Figure 2

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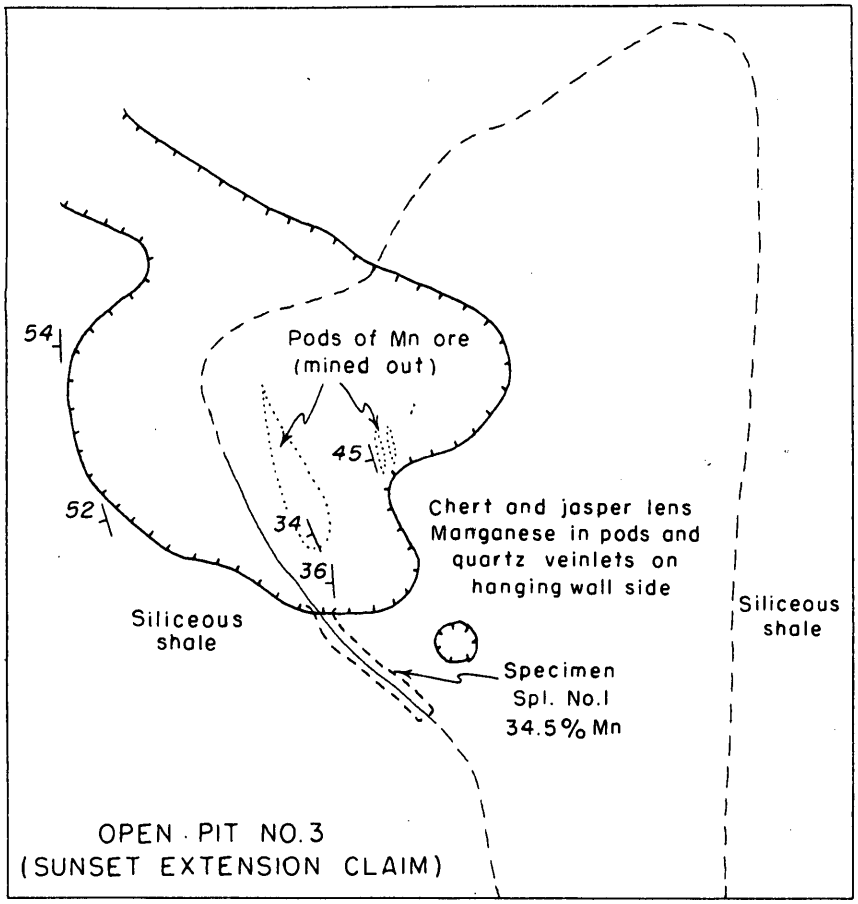
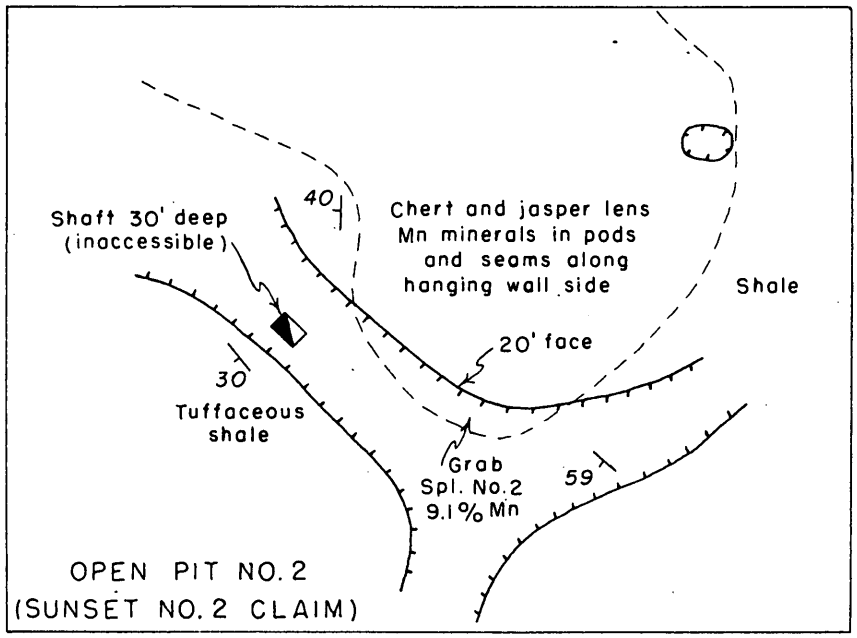
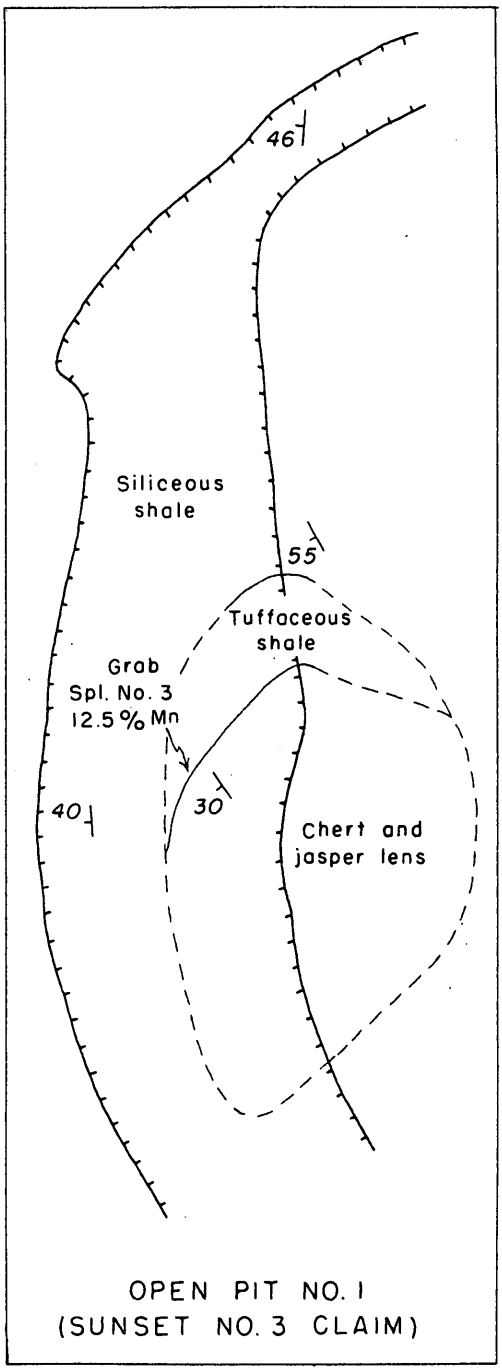
JUL 1 2 1955







From Company maps

GEOLOGIC SKETCH MAPS OF PITS NOS. 1, 2, AND 3
SUNSET MANGANESE MINE, PLUMAS COUNTY, CALIFORNIA

40 0 40 80 Feet

Figure 3

RECEIVED
JUL 12 1955

Memorandum

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $26,973.36
Docket No. DMEA 2837 - Manganese
Sunset Mining Corporation
Sunset Mine
Seneca Mining District
Plumas County, California

The denial of the subject application by this Division is based on the following information:

1. The applicant proposed a three stage project to explore several deposits of low-grade manganese at the Sunset Mine in northwest Plumas County, California. The proposed program follows:

   Stage I Sink a 100-foot shaft in the footwall of the ore body on the Sunset No. 2 claim.
   Drive a 50-foot crosscut to the ore body.
   Drive 150 feet of drift along the strike of the ore body.

   Stage II Drill 7 diamond drill holes to explore the ore bodies on the Sunset No. 3 and Sunset Extension claims.

   Stage III Trench by bulldozer the ground between the known deposits.

2. The manganese occurs in a series of elongated and disconnected bodies of manganese-bearing cherts in metamorphosed sediments. The primary minerals are rhodonite and braunite. Some secondary oxides occur within the cherts, and nodules of psilomelane are found in the detritus covering the cherts and in narrow clay bands interbedded with the cherts. The primary ore is silicious and of low grade.

3. The Utah Construction Company produced some 248 tons of ore containing 18.8 percent manganese in 1949 from these deposits before abandoning their operation.

4. The applicant has stated that he intends to install a washing plant to upgrade the product to 40 percent manganese. However he has had no tests conducted.

5. Previous sampling by the Bureau of Mines in 1940 and 1949 has indicated the ore bodies are of low grade.

6. The examining engineer of the Field Team recommended a project to explore the deposits at depth. He believed the project would indicate the existence of large, low-grade bodies of manganese. At the present time, however, there is little use for low-grade manganese ore of this siliceous type.

   The Mining Division, USBM, Region III, concurred in the examining engineer's recommendation.

7. The Field Team noted the examining engineer's and Mining Division's recommendations, but recommended denial of the application.

8. The Commodity Division of the U.S. Geological Survey and the Commodity Division of the Bureau of Mines concur in the denial.

W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

FAHutledge/esf
6/24/53
cc: Docket
Code 400
Admr. Reading File
Operating Committee

100

JUN 25 1953

Mr. Albert Hilliard
Summit Mining Corporation
Symington Building
Reno, Nevada

Re: Contract No. [illegible] - Summit Mining Corporation
Summit Mine
[illegible] Mining District
[illegible] County, California

Dear Mr. Hilliard:

Your application for aid for an exploration project and other data available to us in our higher order file, the above-referenced property have been reviewed.

Prior to approval of the mineral strategic exploration assistance sector, in the judgment, more definite grades of pitchblende materials of acceptable grade in quantities that will significantly improve our mineral supply position for the national defense program.

Careful study of all our information, although showing the occurrence of low-grade uranium mineralization on the Summit mine, indicates to us that the probability of discovering minable ore reserves by your proposed program is not sufficiently promising to justify government participation. In regard to other possibilities, under these circumstances, that your application for exploration assistance is denied.

We wish to express our interest in the defense mineral program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

PMutledge/esf (6/24/53)
cc: Docket
Code 400
Admr. Read. File
PT Reg. III
Operating Committee
Martin Carr, GS
Mr. Cosby, GS

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 6/22/53

REFERRED TO:
1. ~~Operating Committee~~
2. Miss Birmingham - Rm. 4539
3.
4.

FOR:

..... Action	..... Recommendation
..... Approval	..... Record of .....
..... Comment	
..... Conference	..... Referring to .....
..... Consideration	
..... Filing	..... Reply for signature of .....
..... Instructions	
..... Investigation	..... Rewriting
..... Initials	..... Signature
..... Mailing	..... Suggestions
..... Previous correspondence	..... Your information

REMARKS: Field Exam. Report
~~For Agenda 6/24/53~~

Check (X) before the items needing attention.

George C. Selfridge
Initials of sender.

GPO 16—63815-1

Kantor
Trafalgar 7-7167

American Manganese Producers Assoc.

Mr. Selfridge,

Mr. Adkerson - phone ~~NA 8-9180~~ - called for a Mr. Irving Kantor of N. Y. in Sunset Mining Corp. (Calif.). Mr. Kantor has been advised that an application has been forwarded by the Field Teamin San Francisco and wants to come in to talk with you when the application is in your hands. He would like to come next week if you have received it by then. Mr. Adkerson will advise Mr. Kantor.

E.F.

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

Office of
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

June 17, 1953

Memorandum

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

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2837, Manganese, Sunset Mining Corporation Sunset Mine, Seneca Mining District, Plumas County, Calif.

Reference is made to your letter dated January 16, 1953, referring the subject application to this office for a field examination.

Attached are the original and three copies of a report entitled "DMEA-2837, Sunset Mine, Plumas County, California, Manganese," by George H. Holmes, Jr., Mining Engineer, U. S. Bureau of Mines, dated June 9, 1953.

The engineer believes there is a possibility of developing a substantial tonnage of low-grade manganese ore. He has recommended that the property be explored by diamond drilling. The diamond drilling will explore three of the larger exposures on the claims with a minimum of 1500 feet of diamond drilling. The drilling can be done at a cost of $7,125.00; also included is an item of bulldozer trenching to explore between the known exposures. Eighty hours of bulldozer work has been recommended at $14.00 an hour. An item of $2,000.00 for supervision, an item of $500.00 for analytical work, and an item of $100.00 for core boxes have been included in the cost of the project. The total cost of the project is $10,845.00.

Although the examining engineer recommends that the property be explored by diamond drilling and bulldozer trenching, and Mr. A. C. Johnson concurs, Mr. Bailey and I, based on the June 9, 1953, report by Holmes, and a preliminary report by Holmes based on his examination of the property in June 1949, have serious doubts as to the advisability of carrying out such exploration on the Sunset property. We have available to us also a Bureau of Mines report by S. Ricker, dated October 1940.

Reviewed by
DMEA OPERATING COMMITTEE
6-22-53
(date)

Ricker reported that "It is doubtful if more than a few hundred tons of shipping ore could be selectively mined from chert deposits of this kind. An attractive tonnage of low grade silicious ore could probably be developed. Several of the chert outcrops are from 50 to 60 feet wide and 100 feet or more long. Due to lack of development work, it is difficult to estimate the exact dimensions of any of the manganese bearing zones. The meta-sediments are stained with manganese and also contain some nodules and seams of good-looking ore. If this material carried only a few percent of manganese, an enormous tonnage could be developed even though they extended to only a shallow depth."

Ricker took four samples showing 15.3, 0.27, 32.8 and 2.77 percent manganese.

Holmes, in his 1949 report, gives the result of a large number of samples which indicate the spotty character of the ore and its overall low grade. Since his examination of the property in 1949, some 248 tons of ore containing 18.8 percent manganese, 37.6 percent silica and 15.5 percent iron on the average were mined by Utah Construction Company and shipped to Geneva, Utah. The first shipment ran 25.7 percent managense and the last 33.9 tons ran only 10.5 percent manganese. Apparently, the shipped ore had been hand-sorted and with each shipment made there was increased difficulty of keeping up the grade by adding high grade. The geology of the deposit is imperfectly known, but the ores can be expected to grade from near surface oxide ores into undesirable silicate ores at depths of a hundred feet or less. This expected change in the character of the ore limits the downward extent of the ore bodies and materially reduces the possibility of finding very large tonnages of even low grade oxide ore.

Apparently all surface exposures have been noted and ore probably mined from them. The applicant desires to trench between outcrops with the hope of finding more ore. The manganese, however, occurs in chert which is extremely weather-resistant so it does not seem reasonable to suppose that in spots the chert was eroded and ore will be found in the areas between outcrops.

Mr. Bailey and I question the location of the proposed diamond drill holes 1, 2, 4, and 5 as shown on Figure 2 of Holmes' 1953 report, and the direction holes 6, and 7 are pointed. The first named group seems to be shooting in the dark for very uncertain targets; the direction holes 6 and 7 are pointed does not seem to be at right angles to the strike of the orebody.

Neither the President, nor Vice-President of the Company is experienced in mining and the fact that they have stated they plan

to install a washing plant but have had no tests on any of the ore makes one question whether they have any idea of the difficulties they might run into in attempting to up-grade the ore to a 40 percent product. The fact that they made such a statement seems to indicate that they are aware that the deposit is low grade.

The deposit has some promise for either of two types of mining operations: (1) Selective mining and hand-sorting of the rich pods and nodules, and (2) large scale open pit mining of the bulk of the manganese-bearing chert. The previous attempts at selective mining and sorting indicate such a method has been non-economic and the discovery of increased tonnages of similar unmineable material at depth would not result in increased production. Large scale mining of the chert masses is not feasible for they are too low in grade, and, further, no additional exploration seems necessary to prove the availability of large tonnages of the manganese-bearing chert.

Taking everything into consideration, it is Mr. Bailey's and my recommendation that exploration of the Sunset claims is not warranted under the DMEA program.

H. C. MILLER

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

Attachment

Copy to: E. H. Bailey, USGS

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-2837, Sunset Mine

Plumas County, Calif.

- Manganese -

George H. Helmes, Jr., Mining Engineer
U. S. Bureau of Mines

June 9, 1953

Reviewed by
DMEA OPERATING COMMITTEE
6-22-53
(date)

EXAMINATION REPORT

Docket No.: DMEA-2837 (Manganese)

Name and address of applicant: Sunset Mining Corporation
c/o Albert Hilliard
Byington Building
Reno, Nevada

Name and location of property: Sunset mine,
Seneca Mining Dist.,
Plumas County, Calif.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The Sunset manganese mine in northwest Plumas County, Calif., has been operated intermittently on a small scale since 1917 and has produced a few hundred tons of a low-grade, highly siliceous manganese ore.

A belt of northwesterly trending and southwesterly dipping metamorphosed sediments extends along the Sunset claims and contains a series of elongated and discontinuous beds of manganese bearing cherts. Narrow clay bands interbedded with the cherts contain psilomelane nodules. Three deposits were partially explored by test pitting and trenching with subsequent open pit mining on the two larger deposits. The work, however, was inconclusive and inadequate to determine the lateral and downward extent of the ore bodies and to estimate ore reserves. No exploration has been done in areas between known deposits.

It is believed that an exploration project to prospect for the lateral and downward extensions of known ore bodies and to explore for similar deposits in intermediate areas is justified. This work should indicate the existence of large, low-grade ore bodies which, with

efficient mining and sorting, could produce a grade of ore acceptable to the Geneva plant of the U. S. Steel Co.

The proposed program would involve a minimum of 1500 feet of diamond drilling on three deposits and 80 hours of bulldozer trenching in unexplored areas between known deposits.

Costs of the project appear reasonable and its approval is recommended.

TIME SPENT ON PROPERTY

The Sunset manganese property was examined during May 20 to 22, 1953 by an engineer[1] of the Bureau of Mines accompanied by W. J. McMillan, owner of the property.

NAME AND LOCATION OF PROPERTY

The Sunset manganese mine is in secs. 2 and 3, T. 26 N., R. 8 E., M.D.B.&M. in northwest Plumas County, Calif., about 15 miles by road northwest of Greenville, a town on California State Highway 89 and the Keddie-Klamath Falls Branch of the Western Pacific Railroad (fig. 1).

CONDITION AND SEASONAL ACCESSIBILITY OF ROAD TO THE PROPERTY

California State Highway 89 is accessible to travel during the entire year. The 5.5 miles of county and U.S. Forestry road extending from the highway to the property are in good condition and are passable for about 8 months of the year. Heavy snows block the mine access roads during winter months, although with adequate snow removal equipment they could be kept open to permit continuous operation.

COMPETENCY OF APPLICANT AND OPERATING PERSONNEL

Mr. Irvin Kantor, president of the company, is not familiar with

[1] George H. Holmes, Jr.

any phases of mining and would not be competent to supervise exploratory work on the property. Mr. Arnold M. Phippen, vice president, has reportedly had some mining experience and supervised the small amount of exploration work that was done at the property during 1952, however, it is the opinion of the Mining Division that he has not had sufficient experience in mine exploration to supervise the proposed work.

It is recommended that the services of a mining engineer, acceptable to the Bureau of Mines, be obtained.

APPLICANT'S PROPERTY RIGHTS

The Sunset Mining Corporation holds a 20-year lease on a group of eight claims owned by William J. McMillan of 427 La Rue Street, Reno, Nev. Mr. McMillan states that he is the sole owner, having acquired the minority interests of A. E. McKay, San Francisco and Ruth J. Williamson, Santa Barbara, Calif. Claims in the group are the Sunset, Sunset No. 1, No. 2, No. 3, No. 4, No. 5 and the Sunset Extension and Extension No. 1.

Failure of the applicant to mine and sell not less than 6,000 tons of manganese ore each and every fiscal year during the term of the lease would be cause for cancellation of the lease. The Owners Consent to Lien would protect the DMEA in this matter. Mr. McMillan has also advised the Mining Division that in the event the lessee failed to comply with the terms of the lease, with a resultant cancellation of the lease prior or during the period of DMEA exploration, that he would request continuance of the exploration work.

No information is available regarding the financial responsibility of Mr. Kantor, president of the corporation, other than his statement that he is financially able to meet the requirements of his share of the DMEA loan.

DESCRIPTION OF PROPERTY

The property is located in the Sierra Nevada range of mountains at an elevation of about 5,700 feet. The relief of the area is rugged. The climate is temperate with warm, dry summers and severe winters with heavy snows. An abundant supply of timber on the claims can be used for mine and construction work. The one structure on the property is a 1-room cabin.

Mine workings comprise two open pits on the Sunset No. 2 and No. 3 claims which were excavated by the Utah Construction Company and numerous comparatively shallow open pits and trenches on the other six claims. The No. 2 open pit is irregular having been opened for a length of 150 feet, varying in width from 50 to 170 feet, and reaching a depth of 24 feet at its center. The No. 3 pit is about 200 feet long, 15 to 70 feet in width, and reaches a depth of 20 feet at its center (fig. 2).

The claim map accompanying the application adequately shows the relation of the various open pits on the property. No samples were taken during the examination as the production record of the Utah Construction Company shows the grade of ore that can be expected. The property was adequately sampled by the Bureau of Mines during an intensive examination made between June 15 and 30, 1949. Results of this

examination together with assay maps and data are contained in "Preliminary Report, Sunset Manganese Property, Plumas County, California, Sept. 1949" by George H. Holmes, Jr.

GEOLOGY AND ORE RESERVES

A belt of northwesterly trending and southwesterly dipping metamorphosed sediments extends along the Sunset claims and contains a series of elongated and disconnected bodies, or beds, of manganese bearing cherts. The primary minerals are rhodonite and bementite. Some secondary oxides occur within the cherts, and nodules of psilomelane are found in the detritus covering the cherts and in narrow clay bands interbedded with the cherts.

The deposit on the Sunset Extension claim occurs within an irregular body of altered chert. The several open cuts and trenches excavated across the deposit expose bands of manganese bearing chert and narrow strata of clay which contain nodules of psilomelane. No work has been done on this deposit by the applicant.

The deposit on the Sunset No. 2 claim comprises a wide lens of steeply dipping metamorphosed cherts of indeterminate size. The cherts are manganese bearing and contain a high percentage of iron in the form of hematite. Narrow clay bands containing nodular psilomelane are interbedded with the cherts. The open pit shows manganese oxides continuing to a depth of 24 feet and it is possible that this type of mineralization continues to greater depths. Surface indications show this deposit to be from 300 to 400 feet in length and up to 200 feet in width.

Another body of altered, manganese bearing cherts occurs on the Sunset No. 3 claim. This deposit is similar to the one on the Sunset Extension claim and is characterized by massive quartz occurring along the footwall and with narrow quartz stringers crossing the cherts. Manganese oxides occur sporadically within the cherts and have been exposed by the open pit to a depth of 20 feet.

Dense timber and a thick overburden cover a large part of the property making it impossible to determine the existence of other bodies of manganese bearing cherts.

Although pits have been opened on two deposits, this work has not sufficiently delimited the mineralized bearing areas to make an accurate estimate of ore reserves. The deposits are low grade with a high silica and iron content and the narrow clay bands containing nodular material comprise a very small part of the deposit.

PAST OPERATIONS

Manganese was discovered in this area during 1917 and a small amount of exploration was done. It is reported that 4 to 5 carloads of sorted, high-grade ore was produced and shipped at this time. Some bulldozer work, test pitting and trenching was done during 1947 but no production was made.

The property was leased to the Utah Construction Company during 1949-1950 and open pits were excavated on the Sunset No. 2 and No. 3 deposits. Ore produced was shipped to the Geneva, Utah plant of the U.S. Steel Co. The following is the production record of the Utah Construction Company as furnished by W. J. McMillan:

MANGANESE ORE SHIPMENTS
SUNSET CLAIMS

Date shipped	11-22-49	11-29-49	12-9-49	12-15-49	12-23-49	12-30-49
Net Dry Weight, lbs	109,378	79,798	85,900	83,402	70,618	67,844
ANALYSIS:						
Silica	48.23	45.03	44.18	32.83	26.36	23.40
Alumina	2.75	4.70	2.23	6.13	7.54	8.01
Lime	Trace	Trace	.28	.64	.92	1.04
Magnesia	Trace	Trace	Trace	Trace	.54	Trace
Sulphur	.005	.029	.117	.065	.200	.032
Iron	3.0	6.2	7.7	24.0	26.2	34.6
Phosphorus	.102	.112	.118	.096	.114	.090
MANGANESE	25.7	23.1	20.0	13.1	16.8	10.5
Arsenic	.005	.017	.008	.034	.012	.011
Zinc	.07	.02	.04	.06	.03	.05
H_2O	9.2	9.5	13.8	7.7	11.35	11.2
Settlement	$501.97	$297.16	$239.50	$165.57	$62.89	$34.72

An average of all shipments is 248 tons containing 18.8 percent manganese, 37.6 percent silica, and 15.5 percent iron.

No production has been made by the present lessee.

AVAILABILITY OF MANPOWER, ETC.

An adequate supply of labor is available in the immediate area. Operating supplies can be obtained at Greenville, Calif. and major equipment can be rented or purchased from dealers at Reno, Nevada, or Sacramento, Calif.

Water can be obtained from a series of springs about 2,300 feet southwest of the No. 2 deposit. The estimated flow is 300 to 400 gallons per minute. Timber for mine use is available from the heavy

stands on the property. A Pacific Gas and Electric power line passes about 4 miles north of the property. Past mining operations were done with gasoline or Diesel-driven equipment.

A loading ramp on the Western Pacific Railroad at Canyon Dam, about 6 miles northeast of the property, is available to shippers.

STATEMENT OF APPLICANTS' PROPOSAL

The applicant proposes to explore the Sunset No. 2 deposit by sinking a 100-foot shaft, crosscutting 50 feet northeast, and drifting 150 feet northwest on this level. The Sunset No. 3 and the Sunset Extension deposits would be explored by diamond drilling. Areas between known deposits would be explored by bulldozer trenching.

This program is not acceptable to the Bureau of Mines as the location of the proposed underground workings and diamond drill holes would not effectively explore the deposits. Shaft sinking and drifting costs are unreasonable and the cost of bulldozing is excessive.

It is the opinion of the examining engineer that the proposed exploration should consist of diamond drilling on three known deposits to further explore them laterally and downward and to bulldozer trench in unexplored areas. This plan was discussed thoroughly with W. J. McMillan, owner of the property, and representative of the applicant, and it met with his approval.

OPERATOR'S PROPERTY RIGHTS

The applicant's lease covers the 8 claims in the Sunset group. Diamond drilling would be conducted on the Sunset Extension, and the Sunset No. 2 and No. 3 claims; with bulldozer trenching on all 8 claims. Production from all claims would be subject to royalty payments to the

Government.

EXPLORATION PROJECT

The project can start within 30 days after approval of the contract and can be completed within 4 months.

DESCRIPTION OF PROJECT

The project will comprise diamond drilling the Sunset Extension, the Sunset No. 2, and the Sunset No. 3 deposits and bulldozer trenching unexplored areas; drilling would consist of two 150-foot holes on both the Sunset Extension and No. 3 deposits, and three 300-foot holes on the No. 2 deposit (fig. 2). Total drilling would be 1,500 feet. Bulldozing could be completed within 2 weeks and can be concurrent with the diamond drilling. Eighty hours of bulldozing are recommended.

Work would be done by sub-contract. The diamond drill cost of $4.75 per foot for AX size core, submitted by the Processed Diamond Bit and Tool Company, San Francisco, Calif. is considered reasonable. This is an overall cost covering moving in and out, drilling, casing, reaming, cementing, etc. Bulldozer trenching will be done under contract by James North of Crescent Mills, Calif., at a rate of $14.00 hourly.

Data pertinent to the diamond drilling are: (See fig. 2)

Deposit	Hole No.	Bearing	Dip	Length, ft.
Sunset Extension	1	N70°E	-30°	150
" "	2	N70°E	-30°	150
Sunset No. 2	3	N70°E	-30°	300
" "	4	N70°E	-30°	300
" "	5	N70°E	-30°	300
Sunset No. 3	6	N88°E	-30°	150
" "	7	N88°E	-30°	150

Hole locations are tentative with subsequent holes on each deposit dependent upon results from the first hole drilled in each area. Holes on the Sunset Extension deposit are designed to cut the mineralized zone 50 feet down dip; and holes on the Sunset No. 2 and No. 3 deposits will cross ore zones 50 feet below the deepest sections of the pits.

ALLOWABLE COSTS OF PROJECT

Independent contracts:

Diamond drilling - 1500 feet @ $4.75	$7,125.00
Bulldozer trenching - 80 hours @ $14.00 . . .	1,120.00

Labor, supervision, consultants:

Superintendent, 4 months @ $500/month . . .	2,000.00

Operating materials and supplies	None
Operating equipment	None
Rehabilitation and repairs	None
New buildings	None
Miscellaneous:	
Analytical work	500.00
Core boxes and sampling supplies	100.00
Contingencies	None
Total cost of project	$10,845.00

Government participation = 75% = $8,133.75

OTHER DATA

The applicant has not had any beneficiation tests made on manganese ores from the property, but states that he plans to install a washing plant to recover the higher grade psilomelane nodules from the clays and to upgrade the manganese bearing cherts. It is planned to produce a plus 40 percent product for shipment to the Government manganese stockpile at Wenden, Arizona and a lower grade plus 20 percent product for shipment to the Geneva plant of the U.S. Steel Co. This plan is possible but without prior metallurgical testing it cannot be considered

conclusive.

Selective mining with careful sorting could undoubtedly produce a product which would meet the present requirements of the U. S. Steel Company's Geneva, Utah plant. Present payments are 80 cents a unit, f.o.b. rail cars, for plus 20 percent manganese ores irrespective of silica content. Mining, sorting, and haulage costs should be well within the minimum $16.00 payment offered by U.S. Steel, and a well planned exploration program should indicate ore reserves adequate to permit a modest operation. Operations should, however, be under the direction of a competent superintendent.

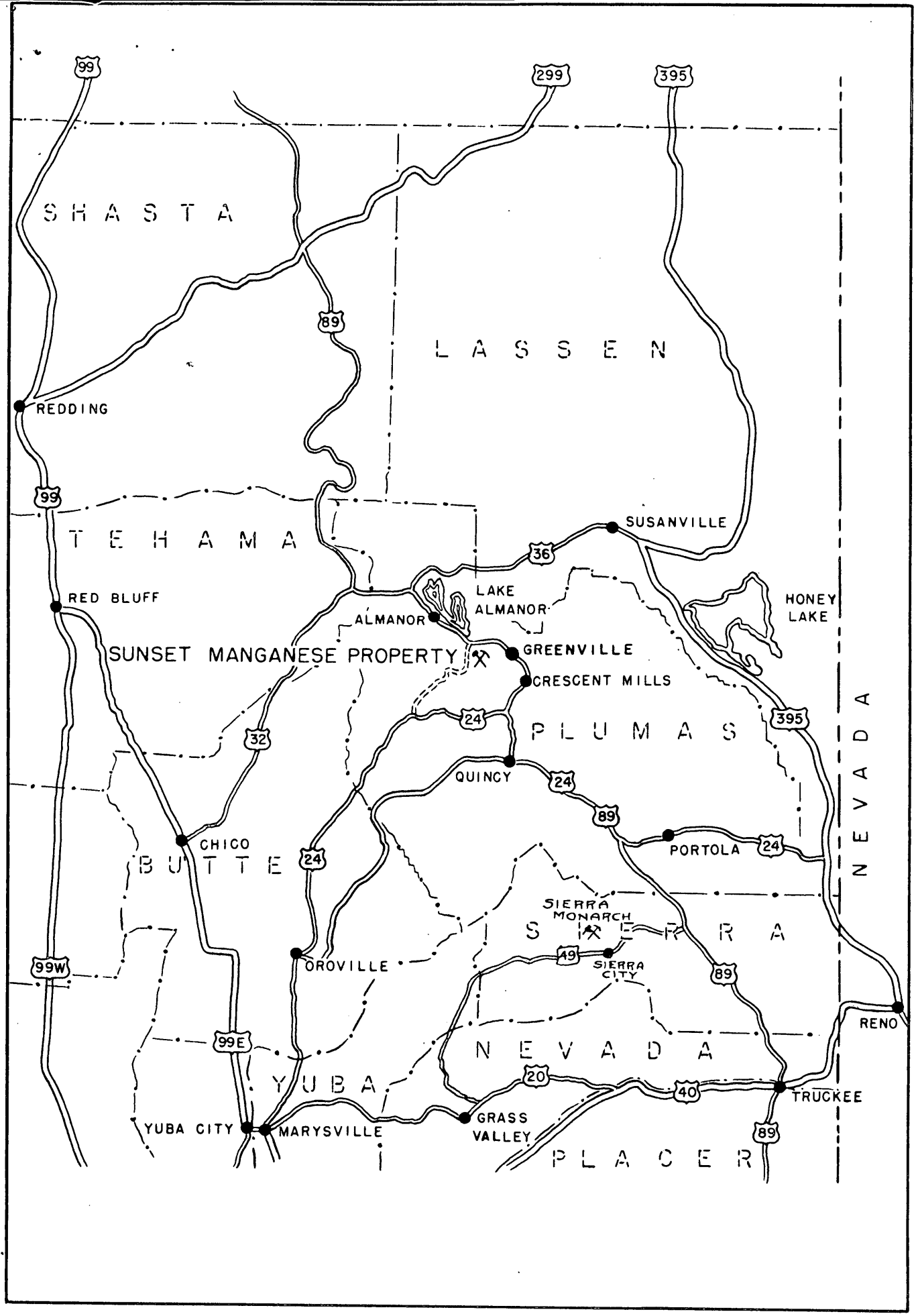
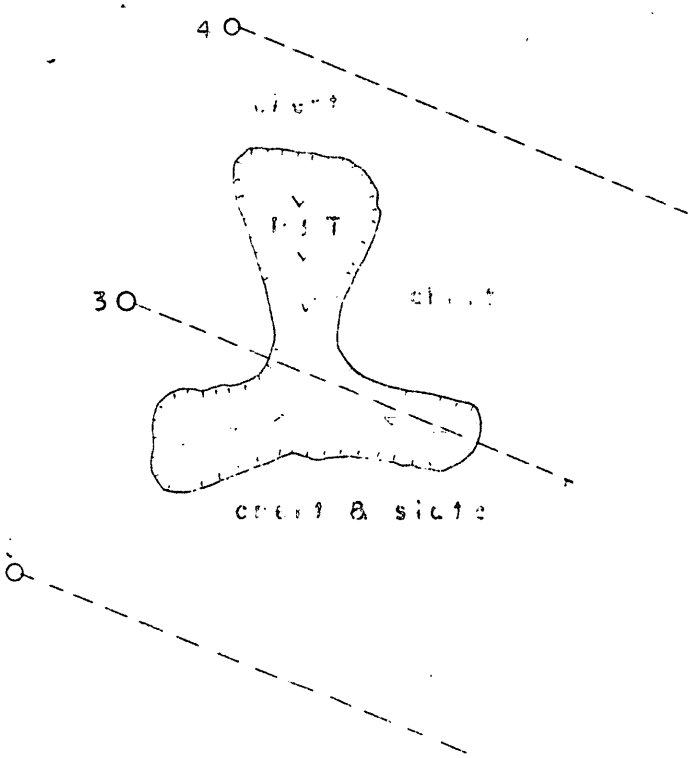
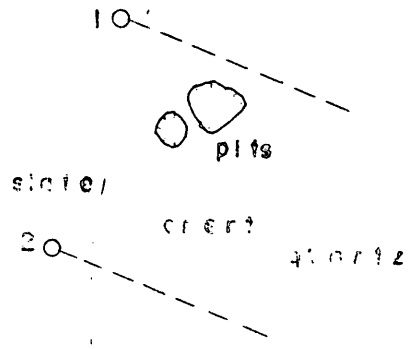


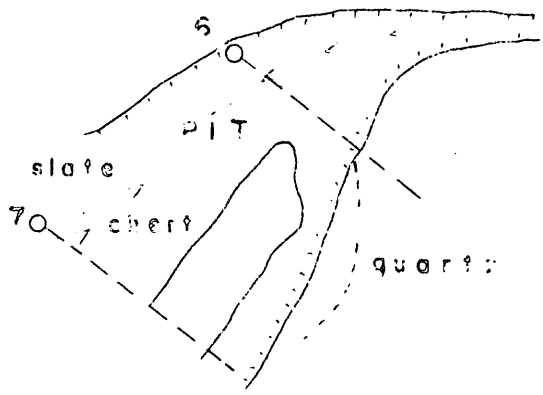
Figure 1.- Location map.



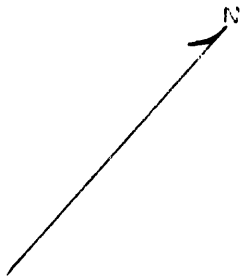
SUNSET NO. 2



SUNSET EXTENSION



SUNSET NO. 3



PLAN of OPEN CUTS
showing proposed Drill Holes
SUNSET MANGANESE MINE
PLUMAS COUNTY, CAL.
DMFA-2827
Scale 1" = 100'

FIG. 2 PLAN MAP

JAN 3 0 1953

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2837, Manganese
Sunset Mining Corporation
Sunset Mine
Seneca Mining District
Plumas County, California

Dear Mr. Miller:

Reference is made to the subject application which was referred to your office for a field examination by our letter of January 16, 1953.

Enclosed are copies of a memorandum by Gilbert L. DeRuff, Jr., U. S. Bureau of Mines, to complete your file.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

FARutledge/ls
1/30/53

Approved:

J. H. Hedges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

cc: DOCKET
CODE 400
FIELD TEAM, REG. III
ADMN. READ. FILE
OPER. COMMITTEE
N. B. MELCHER, USBM
M. D. CRITTENDEN, USGS

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

400

January 27, 1953

Memorandum

To: George Selfridge, Chief, Iron and Ferro-Alloys Branch, DMEA
Through: N.B. Melcher

From: Gilbert L. DeHuff, Jr., Commodity Specialist

Subject: DMEA - #2837, Sunset Mining Corporation, in Plumas County, California.

Application is made for aid to explore applicant's leased property for manganese ore, by sinking a 100 foot shaft, crosscutting and drifting, core drilling, and trenching by bulldozer. Cost is estimated at $35,451,88.

A study of applicant's description of the proposed work suggests that it will probably be more extensive than that covered by the estimate.

If DMEA action is proposed, the lease should be studied to ascertain whether any of its features would be unfavorable from the viewpoint of DMEA. It contains a provision requiring the mining and sale of 6,000 tons a year.

This deposit is one of a type found in this part of California. Manganese bearing cherts occur within a belt of metamorphosed sediments. The primary ore minerals are reported by the California Division of Mines to be mainly rhodonite and bementite. Narrow clay bands containing psilomelane nodules have provided a small amount of shipping ore from this property, but the amount of this type of material is believed to be quite limited. Furthermore, to produce shipping grade ore selective mining, together with close sorting and cobbing, is necessary.

Applicant does not indicate whether their proposed operations are based upon oxide ore or silicate, and does not mention any plans for washing or other form of concentration.

The property was examined by the Bureau of Mines in 1940, and again in 1949, at which latter time old pits and open cuts were cleaned out, trenches excavated, and fresh faces exposed by drilling

January 27, 1953

and blasting. The engineer stated that, "Additional exploratory work would be necessary to prove the possible existence of large low-grade ore bodies; bulldozing to delimit lateral surgace extensions and core drilling to determine continuity at depth." He also remarks, "That the character of the deposits, proximity of power and water, and the comparatively short haul to rail cars, would make for economical mining."

Because the work to date has been inconclusive and there appears to be some possibility for the development of a large low-grade deposit of manganese bearing material here, it is recommended that this application be forwarded to a field team for their consideration, and that they make an examination of the property.

JAN 1 6 1953

Mr. H. C. Miller, Executive Officer
DMMA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMMA 2837, Manganese
Sunset Mining Corporation
Sunset Mine
Seneca Mining District
Plumas County, California

Dear Mr. Miller:

Reference is made to the above docket which is being referred to your office for a field examination.

This property was examined and sampled by the Bureau of Mines in 1949. Later the Utah Construction Company shipped several cars of manganese to the Geneva Steel Company. The applicant has a limited exploration program now in progress and possibly has made shipments of manganese.

The examining field team should pay particular attention to the new workings, and if any recent shipments have been made, the grade of these shipments should be ascertained.

The costs for the project work scheduled appear high, and we believe they may be reduced. If the examining field team conclude that an exploratory project is warranted, all of the data necessary for the preparation of Exhibit "A" of a contract should be obtained.

A memorandum from Mr. Max D. Crittenden, U. S. Geological Survey, is enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

AP ROVED:

J. H. Hedges
Member, Bureau of Mines

T. P. Thayer
Member, Geological Survey

FARutledge/ls
1/12/53

CC: DOCKET
ADMN. READ. FILE
CODE 400
FIELD TEAM, REG. 3
OPER. COMMITTEE
M. D. CRITTENDEN, USGS
N. B. MELCHER, USBM

400

JAN 1 6 1953

Mr. Albert Billiard
Sunset Mining Corporation
Rivington Building
Reno, Nevada

Re: Docket No. DMEA 2837, Manganese
Sunset Mining Corporation
Sunset Mine
Seneca Mining District
Plumas County, California

Dear Mr. Billiard:

Your application for assistance in exploring the Sunset Mine, Plumas County, California, has been reviewed by the Iron and Ferro-Alloy Division of the Defense Minerals Exploration Administration and has been referred to Mr. M. C. Miller, Executive Officer, DMEA Field Team, Region III, 1012 Flood Building, 870 Market Street, San Francisco 2, California, for a field examination.

The Regional Office will contact you at an early date in regard to the examination of your property. Any assistance that you can render the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

CC: DOCKET
ADMIN. READ. FILE
BODM 400
FIELD TEAM, REGION 3
OPER. COMMITTEE
N. B. MELCHER, DLM
M. D. CRITTENDEN, USGS

IN REPLY REFER TO:

G-MD-CF

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

400

bal
1/9/53

January 8, 1953

Memorandum

To: George C. Selfridge

From: Max D. Crittenden

Subject: DMEA 2837 (Manganese)
Sunset Mining Corporation
Reno, Nevada

The Proposal

The applicant proposes to spend a total of $24,000 to sink a 100-foot shaft, 5 drill holes, and several open cuts on the Sunset claims, in Sec. 2, T 26 N., R. 8 E., Plumas County, California. The claims are controlled by lease from the owner, W. J. McMillan.

History, Production and Development

The Sunset claims were examined by J. M. Nelson of the Geological Survey, in July 1941, (California State Department Mine, Bulletin 152, p. 176, 1950) who reported:

> "The deposit is similar to the other small silicate deposits in this region. Relatively little oxide ore is present and no ore has been produced. Development consists of a few shallow pits and trenches. The better grade of oxide ore is estimated to contain 30 percent manganese."

In June 1949, the property was sampled by Holmes of the Bureau of Mines, who summarized the work as follows:

> "Bureau of Mines work consisted of cleaning out old pits and open cuts, excavating trenches, and drilling and blasting to expose fresh faces. This work indicated the existance of of low-grade ore bodies having a high silica and iron content, and narrow stringers of higher grade nodular material. The work was inadequate to determine the size of the ore bodies and to estimate possible ore reserves."

In 1950 (?), the Utah Construction Company took over the property, intending to operate on a large scale and ship to Geneva Steel Company. Several large open pits were opened. The operation was abandoned after a few cars of material averaging ✓ percent Mn. were shipped. 15-27

In the fall of 1950, W. J. McMillan requested a loan of $75,000, of which $45,000 was to be used for exploration of the Sunset claims. This application was denied on the basis of the abundant information available, and because exploration loans had not been announced.

Geology

The manganese deposits of Plumas County are all of the same type; they are bedded sedementary lenses enclosed in metamorphosed Paleozoic sedements and meta-volcanics. The manganese occurs in lenses or thin elongate beds, which at their best may be up to 15 feet thick and a few hundred feet long. Although the rocks have all been metamorphosed, the manganese content of the beds is little affected. In those lenses that originally contained a high percentage of Mn., the original minerals were changed to braunite or hausmannite and now constitute good shipping ore; in those lenses that contained more silica, the original minerals were converted to rhodonite, spessartite or bementite, and the present grade is low and the ore is siliceous. The Sunset is ore of the latter type.

Surface oxidation has affected all the deposits to some extent, but seldom does much to improve the overall grade, and is slow in acting on the silicate minerals. Thus, relict rhodonite and spessartite occur mixed with the oxides in the ore within 10 to 15 feet of the surface. The average grade reported by the applicant is 20 to 25 percent Mn., and the shipments by Utah Construction Company indicate that this is about average for the deposit as a whole. Development to depths of 100 feet in this type of deposit will show decreasing amounts of oxide ore and increasing amounts of the low-grade primary silicate minerals.

Reports of beneficiation by washing are not supported by test data.

Conclusion and Recommendation

The exploration proposed by the applicant does not appear practical in view of the geologic nature of the deposit. The only means of operation appear to be by milling of the low-grade oxide, but no evidence is presented to indicate that this is feasible. The prospects for discovery of enough low-grade ore to warrant installation

of a mill (even if one were proved feasible) appear very poor.

I do not believe exploration of this deposit is justified.

Max D. Crittenden

DOCKET
Surname:
Martin
DeHuff
Kilsgaard
Geehan
Rutledge
Johnson

400

JUL 25 1955

Western Manganese Corporation
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

Re: Docket No. DMEA 3737 - Manganese
Sunset group
Plumas County, California

Gentlemen:

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

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

Careful study of all our information, although noting the occurrence of manganese mineralization on your property, indicates to us that the probability of disclosing minable manganese ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Program.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: Docket
Code 400
Oper. Committee
Adm. Read. File
Thor Kiilsgaard, USGS
Gilbert DeHuff, USBM
Field Team, Reg. 2-Reno

FARutledge/ls
7/19/55

R.C.

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

July 19, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $50,000.00
Docket No. DMEA 3737 - Manganese
Western Manganese Corporation
Sunset group
Plumas County, California

The denial of the subject application is recommended by this Division based on the following information:

(1) The applicant proposed to explore the Sunset group of 16 mining claims in the Seneca Mining District, Plumas County, California. Previously this same property was the object of requested assistance under Docket DMA 335, W. J. McMillan, in the amount of $75,000, of which $45,000 was for exploration (denied March 10, 1951), and Docket DMEA 2837, Sunset Mining Corporation, in the amount of $26,973.36 (denied June 25, 1953).

(2) The ore bodies are lenses, veinlets, and nodules of manganese-bearing material containing from a few pounds to several hundred tons of mineralized material each concentrated along the hanging wall side of tear-shaped jasper bodies. The jasper lenses (ranging from a few feet to 100 feet in width, from a few tens of feet to 400 feet in length, and extending down dip for over 50 feet and probably as much as several hundred feet) occur in a cherty horizon near the top of the Arlington formation which is composed mainly of shales. Three tear-shaped lenses of jasper crop out in this area, one on each of the Sunset No. 2, Sunset No. 3, and Sunset Extension claims. The primary manganese minerals are rhodonite and bementite. Some secondary oxides occur with the cherts, and nodules of psilomelane are found in the detritus covering the cherts and in narrow clay bands interbedded with the cherts. The primary ore is silicious and of low grade.

(3) The Utah Construction Company produced some 248 tons of ore containing 18.8 percent manganese in 1949 from these deposits before abandoning their operation.

(4) All production by the present applicant has been stockpiled (approximately 750 tons).

(5) Considerable shallow excavation work has been done on the property since the previous applications for assistance were denied. Additional shallow exploration as proposed offers little possibility of discovering new minable manganese ore bodies because the manganese mineralization is confined to the tear-shaped jasper lenses which are well exposed. The jasper bodies being more resistant to weathering processes than the enclosing formations have prominent outcrops. It is improbable, therefore, that other jasper bodies which may be mineralized, but are not exposed in the area to be explored, would be discovered by the shallow trenches of the proposed program.

(6) The examining field team recommends denial of the subject application.

(7) The Field Team agrees with the recommendation set forth under (6) above.

(8) The Commodity Division of the U. S. Geological Survey and the Commodity Division of the Bureau of Mines concur in the denial.

W S Martin

W. S. Martin, Chief
Iron and Ferro-Alloys Division

DOCKET
Surname:
Hunting
Deshoff
Butler

July 19, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $50,000.00
Docket No. DMEA 3737 - Manganese
Western Manganese Corporation
Sunset group
Plumas County, California

The denial of the subject application is recommended by this Division based on the following information:

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(3) The Utah Construction Company produced some 248 tons of ore containing 18.8 percent manganese in 1949 from these deposits before abandoning their operation.

(4) All production by the present applicant has been stockpiled (approximately 750 tons).

(5) Considerable shallow excavation work has been done on the property since the previous applications for assistance were denied. Additional shallow exploration as proposed offers little possibility of discovering new minable manganese ore bodies because the manganese mineralization is confined to the tear-shaped jasper lenses which are well exposed. The jasper bodies being more resistant to weathering processes than the enclosing formations have prominent outcrops. It is improbable, therefore, that other jasper bodies which may be mineralized, but are not exposed in the area to be explored, would be discovered by the shallow trenches of the proposed program.

(6) The examining field team recommends denial of the subject application.

(7) The Field Team agrees with the recommendation set forth under (6) above.

(8) The Commodity Division of the U. S. Geological Survey and the Commodity Division of the Bureau of Mines concur in the denial.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

cc: Docket
Code 400
Adm. Read. File
Oper. Committee

FARutledge/ls

Docket

IN REPLY REFER TO:

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

RECEIVED
JUL 1 9 1955

July 18, 1955

Re: DMEA 3737
Western Manganese Corp.
Sunset Group
Plumas Co., Calif.
$50,000 - Manganese

Memorandum

Copy retained 400

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report

WSM

The small production record of this old property, and of the Plumas County manganese belt fail to support the application for extensive trenching and drilling.

The conclusions of the examiners are justified by the results of the examination.

I concur with the denial recommendation of the Field Team.

N. E. Nelson

N. E. Nelson

denial written 7-19-55

R m E a
Docket
RECEIVED
JUL 1 ? 1955

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

1605 Evans Avenue
Reno, Nevada

W/M

July 8, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-3737 - Manganese
Western Manganese Corporation
Sunset Group
Plumas County, California

In response to your letter of April 13, 1955 requesting a field examination of above subject property, we are attaching four copies of a report by J. D. Warne of the Bureau of Mines and H. K. Stager of the Geological Survey in which they recommend that the application for DMEA exploration aid be denied.

It would appear that the additional work done since the former applications for aid were denied did not disclose any data that adds to the potential value of the property. Roscoe Smith and I are in full agreement with the recommendation set forth in the report.

S. Ricker

Attach.

Reviewed by
DMEA OPERATING COMMITTEE
7-15-55

BUREAU OF MINES
WASHINGTON, D. C.
JUL 11 1 25 PM '55

RECEIVED
JUL 12 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

DMEA-3737 - Manganese
Western Manganese Corporation
Sunset group
Plumas County, California

J. D. Warne
Mining Engineer
U. S. Bureau of Mines

H. K. Stager
Geologist
U. S. Geological Survey

July 7, 1955

Reviewed by
DMEA OPERATING COMMITTEE
7-15-55
(date)

RECEIVED
JUL 12 1955

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Ore deposits	6
Sampling	7
Ore reserves	8
Proposed exploration	8

ILLUSTRATIONS

Figure	Description
1	Location map
2	Claim map of surveyed claims, Sunset group, Plumas County, California
3	Geologic sketch maps of Pits Nos. 1, 2, and 3 Sunset Manganese mine, Plumas County, California

INTRODUCTION

The Western Manganese Corporation, 840 General Petroleum Building, 612 South Flower Street, Los Angeles 17, California applied for Government assistance in a $50,000 program under the Defense Minerals Exploration Administration, docket number 3737, to explore for manganese on the Sunset group of claims, Plumas County, California. The applicants wish to explore several manganese exposures on their claims with a program consisting of trenches and drilling.

A field examination was requested by the Operating Committee, and was made by J. D. Warne of the Bureau of Mines and H. K. Stager and R. M. Smith of the Geological Survey on June 8, 1955, accompanied by Mr. Frank Smith, one of the applicants.

The open pits and surface exposures were inspected and compared with the maps furnished by the company. Three samples were taken by the examiners to check the grade of the ore exposed.

DMA 335

An application for an exploration loan was made in 1950 and denied on the basis of the information available on the property at that time. After additional exploratory work, a second application was made under docket No. DMEA-2837 in June 1953 and the application was again denied. The final proposal consists of 25,000 cubic yards of trenching in 10 large and 50 small trenches and about 3,300 feet of rotary drilling in about 30 holes. The estimated total cost of the proposed program

is $50,000 of which the Government's share would be $25,000.

CONCLUSIONS AND RECOMMENDATIONS

The Sunset mine deposit contains a small tonnage of manganese minerals ore in veinlets, nodules, and lenses associated with jasper.

Considerable shallow excavation work has been done on the property since previous loan applications in 1950 and 1953; but no additional information relative to the size and grade of the deposit was disclosed. Additional shallow exploration work, which is proposed, offers little possibility of discovering new minable manganese ore bodies. The probable tonnage and grade of the deposit can be estimated from present exposures and do not justify the proposed program.

It is recommended that Government assistance under the DMEA program be denied.

LOCATION, ACCESSIBILITY, AND LOCAL RESOURCES

The Sunset group of manganese claims are in secs. 2 and 3, T. 26 N., R. 8 E., and in sec. 34, T. 27 N., R. 8 E., six miles west of Greenville, Plumas County, California (fig. 1).

The claims are accessible by automobile during the summer months by traveling 6 miles from Greenville northwestward along California Highway No. 89 and 5.5 miles southward along a graveled Plumas National Forest road to the mine.

The claims are within an upland area at about 6,000 feet in elevation where timber for mining purposes is plentiful. Water must

be pumped or hauled from springs a distance of about 0.5 mile to the mine. A limited supply of mine labor is available in the area. The nearest source of electric power is at Lake Almanor, 4 miles north of the property. Mine supplies are obtainable locally or from Reno, Nevada, 120 miles distant.

HISTORY AND PRODUCTION

Manganese was discovered in this area in 1917, and four or five carloads of sorted high-grade oxide ore are reported to have been shipped, but no records of this production are available. Some bulldozer stripping and test pitting work was performed during 1947, but no ore was produced.

During 1949-1950 the Utah Construction Company excavated three open pits on the property and shipped 248 tons of ore averaging 18.8 percent manganese, 37.6 percent silica, and 15.5 percent iron.

In September 1953, the main portion of the mine property was leased by Mr. F. A. Smith of Berkeley, California and Mr. T. L. Nye of Reno, Nevada, who later assigned the lease to the Western Manganese Corporation (the applicant) in July 1954. About 300 tons of low grade ore has been stockpiled by this company, and about 15 tons of manganese concentrates has been extracted from other ore recently mined. A small mill was recently erected by present operators adjacent to the Western Pacific Railroad at Canyon Dam, about 6 miles northeast of

the mine property. No ore shipments have been made by the present operators.

PROPERTY AND OWNERSHIP

Sixteen unpatented mining claims comprising the Sunset Group are owned by Mr. W. J. McMillan and Alice McMillan, 427 LaRue Avenue, Reno, Nevada. Recording data and a property map (Map No. 2) are furnished with the application. A lease to Frank A. Smith and T. L. Nye includes eight of these claims which were assigned to the Western Manganese Corp. A claim map covering the main claims where exploration is proposed is shown on figure 2.

The applicants are believed to be sufficiently experienced in mining, in possession of adequate equipment, and to be financially able to perform an exploration program such as is proposed. However, the mode and extent of proposed exploration work is not considered judicious.

DEVELOPMENT

A 15 by 15 foot tool shed is the only structure existing on the property. Equipment now at the mine is listed as follows:

Excavation equipment:

1 3/4-yard Northwest shovel
1 3/4-yard P. & H. dragline
1 Eimco mucking machine, Model 12B

Compressors:

1 205 c.f.m. Ingersoll Rand
1 125 c.f.m. Yeagers

Trucks:

1 5-yard dump G. M. C.
1 7-yard dump Ford (new)
1 3/4-ton pickup G. M. C.
2 3/4-ton pickup Dodge

Bulldozers:

1 Allis Chalmers, AC-14
1 Oliver OC-18 (rented)

Miscellaneous:

1 Hobart Arc welder, 300 kw
4 Swede drills with legs
1 Skagit hoist, double drum, 2 speed

Mine workings consist of three open pits. Pit No. 1 on the Sunset claim is about 200 feet in length and averages 10 to 20 feet in depth. A 10-foot width of low grade manganese ore is exposed near the south end of this pit. Pit No. 2 on the Sunset No. 1 claim is irregular in shape and varys from 30 to 150 feet wide, with a maximum depth of 25 feet. A 15-foot inaccessible shaft was sunk near the north end of this pit. No ore is stated to have been encountered at the bottom of this shaft. Pit No. 3 on the Sunset No. 3 claim is 200 feet in length, 15 to 75 feet wide and averages about 15 feet in depth. Two shallow drift adits were driven from the southern end of this pit into a low hill along the strike of the manganese mineralized zone. These adits which were superimposed upon each other are now only partially accessible and are reported to have been from 35 to 55 feet in length.

The claim map (Map No. 2) accompanying the application shows the locations of the various pits on the property.

GENERAL GEOLOGY

The Sunset group of claims is in an area of moderate relief near the north end of the Sierra Nevada. The surface is covered by slope wash and dense vegetation with few outcrops. The rocks exposed in the vicinity of the mine are chiefly shales and are probably in the upper member of the Arlington formation, which is part of the Lower Calaveras Group of Carboniferous age.

The shale beds strike N. 45° W. and dip from 30° to 60° SW. In a cherty horizon near the top of the Arlington formation, the shales contain a series of lenses of red jasper. These range from a few feet to 100 feet in width, from a few tens of feet to 400 feet in length, and extend down dip for over 50 feet and probably as much as several hundred feet. They are elongate along the strike of the enclosing shale beds.

Three tear-shaped lenses of jasper crop out, one on each of three Sunset claims.

ORE DEPOSITS

The ore bodies are lenses, veinlets, and nodules of manganese-bearing material containing from a few pounds to several hundred tons of ore each concentrated along the hanging wall side of tear-shaped

jasper bodies. The largest lens mined was about 20 feet long, 30 feet high, and 8 feet thick and contained about 400 tons of ore that averaged about 20 percent manganese. Three of these ore bodies have been found and mined on the Sunset claims over a strike length of about 4,500 feet (figs. 2 & 3).

The manganese minerals are pyrolusite, psilomelane, rhodonite, and bementite. Gangue minerals are jasper, chert, hematite, limonite, quartz, and several clays.

About 1,200 tons of ore has been mined from the property with an estimated average grade of about 20 percent manganese. Of this tonnage 248 tons was shipped to U.S. Steel at Geneva, Utah and contained 18.8 percent manganese, 37.6 percent silica, and 15.5 percent iron. Several hundred tons of high grade is reported to have been produced during World War I but no record of tonnage or grade is available. About 750 tons of ore is presently stockpiled at the mine and mill.

SAMPLING

Analysis of three samples taken at the time of this examination from locations shown in figure 3 are as follows:

Sample No.	%, Mn	Description
1	34.5	Specimen of highest grade Mn nodule ore taken from east wall of lower adit, Sunset No. 3 claim, Pit No. 3.
2	9.1	Grab sample of low grade Mn ore remaining at south end of Pit No. 2.
3	12.5	Grab; low grade ore remaining in Pit No. 1.

ORE RESERVES

Except for a few tons of manganese-bearing material exposed as thin lenses and nodules in the sides and bottoms of the open pits, there are no measured or indicated ore reserves on the Sunset claims. Reserves equivalent in tonnage and grade to the ore mined, or about 1,000 tons of ore with an average grade of about 20 percent manganese, is inferred. These reserves are on the Sunset No. 2, and Sunset Extension claims along the hanging wall sides of the jasper bodies exposed in pits No. 2 and 3 (figs. 2 & 3).

PROPOSED EXPLORATION

The applicants have proposed an exploration program consisting of:

1. The excavation of 10 trenches about 500 feet apart, 200 feet long, 4 feet wide, and 20 feet deep.

2. The excavation of 50 trenches, between the trenches proposed under (1), each 100 feet long, 4 feet wide, and 15 feet deep.

3. The drilling of 30 rotary drill holes about 100 feet deep in the favorable areas discovered by (1) and (2).

This work would be confined to the area between open pits Nos. 1 and 3 on the Sunset, Sunset Nos. 1, 2, and 3 and Sunset Extension claims to explore for other manganese ore bodies between the ones that are now known. They estimated the cost of the work would be $50,000.

The manganese ore bodies that are the target of the proposed exploration are confined to the tear-shaped jasper lenses in the chert bed that crops out through the area of the claims. These jasper bodies are resistant to weathering processes and result in prominent outcrops. It is improbable that there are other jasper bodies that do not crop out in the area to be explored which would be discovered by the shallow trenches of the proposed program.

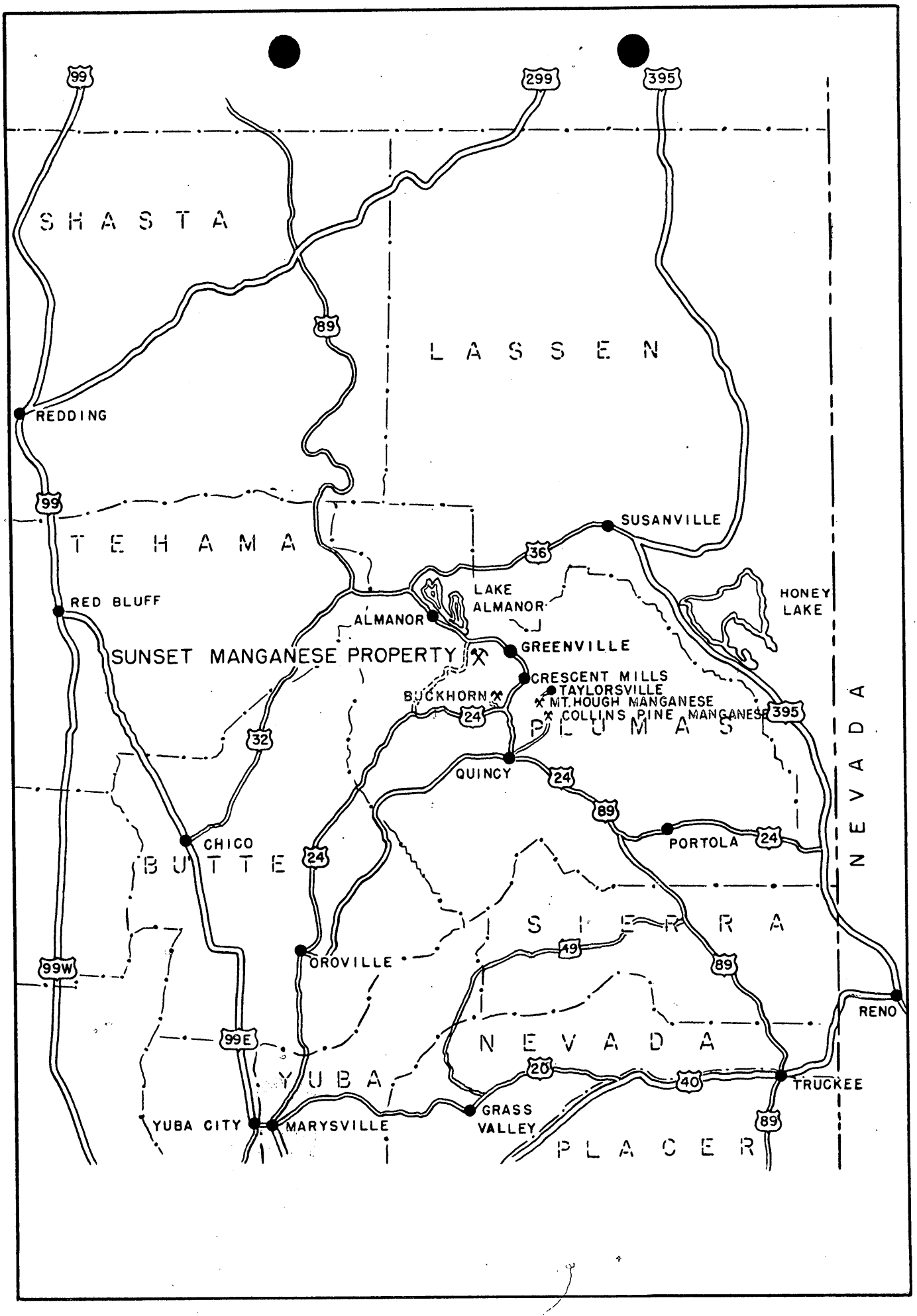

Figure 1.- Location map.

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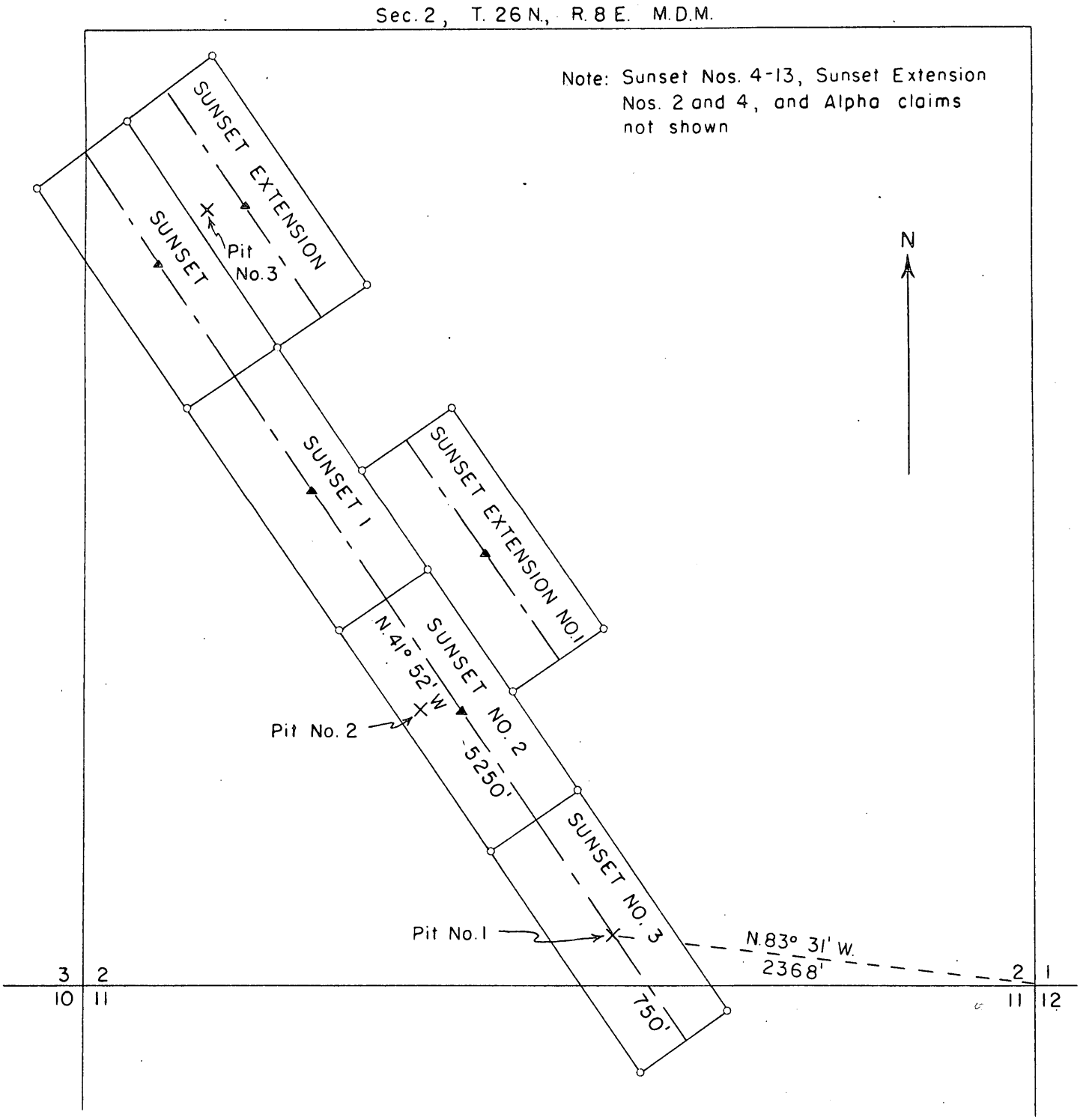

CLAIM MAP OF SURVEYED CLAIMS, SUNSET GROUP
PLUMAS COUNTY, CALIFORNIA

800 0 800 1600 Feet

Figure 2

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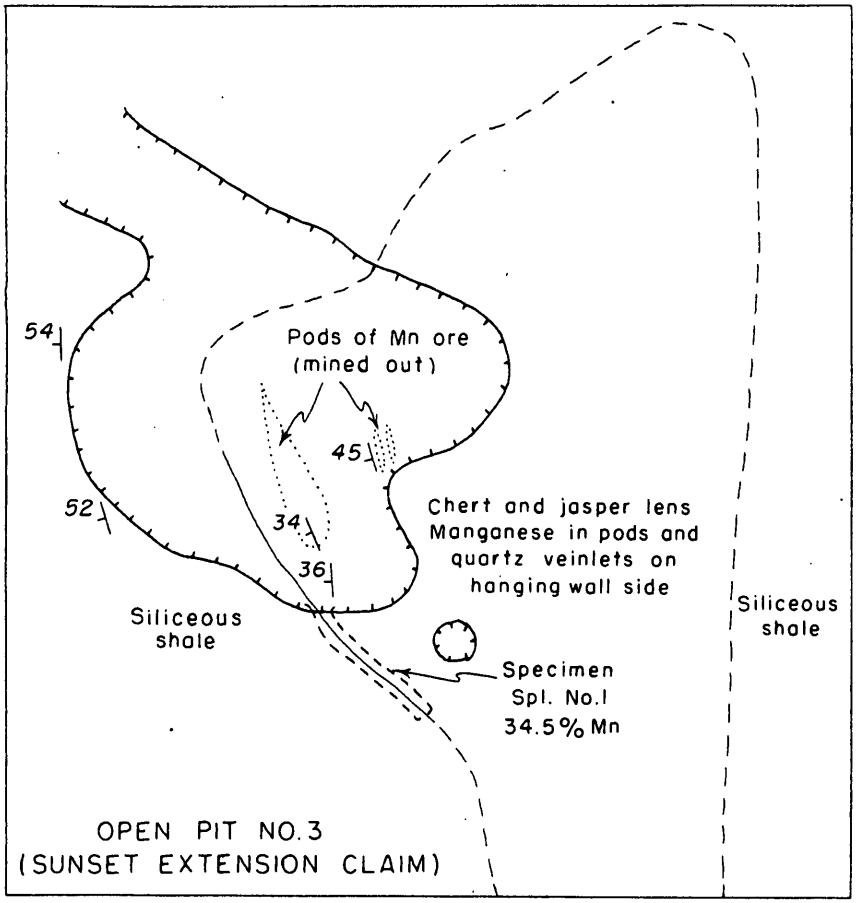
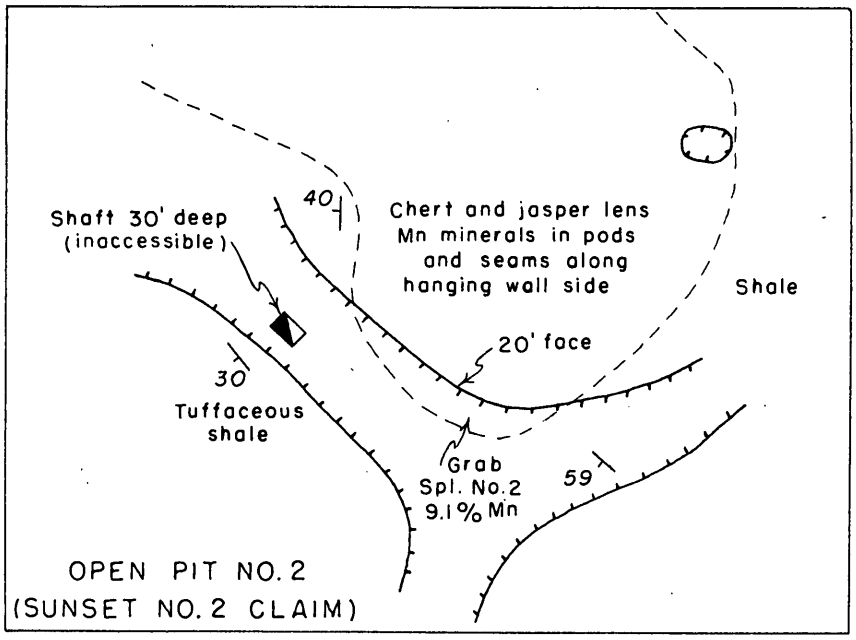
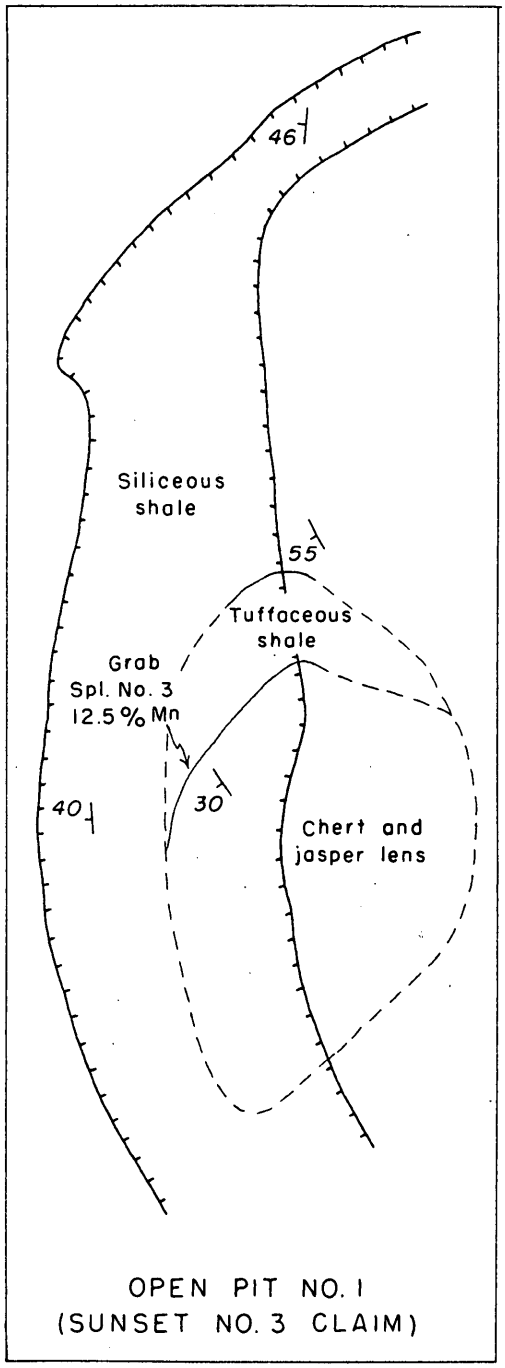
JUL 12 1955







From Company maps

GEOLOGIC SKETCH MAPS OF PITS NOS. 1, 2, AND 3
SUNSET MANGANESE MINE, PLUMAS COUNTY, CALIFORNIA

40 0 40 80 Feet

Figure 3

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JUL 12 1955

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SURNAME

Rutledge
DeHuff
Martin
Selfridge
Kjorsvik

APR 13 1955

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

Re: Docket No. DMEA 3737 - Manganese
Western Manganese Corporation
Sunset group
Fresno County, California

Dear Mr. Richer:

A prior application for exploration assistance, Docket No. DMEA 2837, on a part of the referenced property was denied June 25, 1953. However, because of the good results reported for the additional exploration that has subsequently been completed by the owners, a re-examination by the Field Team is requested.

Two copies of a relevant memorandum dated April 6, 1955, by R. D. Trace, Geological Survey, are enclosed for your information.

In the event the Field Team concludes an exploration program is warranted, it would be appreciated if a claim map is submitted to indicate the location of all the claims listed under 3(f) of the application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosure

FARutledge:foc
4-8-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
Messrs. DeHuff, USBM
Kiilsgaard, USGS

APPROVED:

J. H. Hedges (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

R.G.D.

DOCKET
SURNAME

400

Rutledge
DeHuff
Martin
Kiilsgaard
Hodgson
Selfridge
Johnson

APR 13 1955

Western Manganese Corporation
c/o L. M. Sangrove, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

Re: Docket No. DMEA 3737 - Manganese
Sunset group
Plumas County, California

Gentlemen:

The above-docketed application for exploration assistance has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. Spangler Richer, Executive Officer, DMEA Field Team, Region II, 1605 Bruce Avenue, Reno, Nevada, for a field examination of the property.

Any assistance that you can render the members of the Field Team will be appreciated.

Sincerely yours,

G. O. Mittendorf

Administrator

FARutledge:foc
4-8-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
Messrs. DeHuff, USBM
Kiilsgaard, USGS

R.C.J.

Docket

IN REPLY REFER TO:

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

Defense Minerals Administration
RECEIVED
APR 7 1955

April 6, 1955

Re: DMEA-3737
Western Manganese
Corp.
Sunset group
Plumas Co., Calif.
$50,000 - Manganese

WSM

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application

The present application concerns the same property as DMEA-2837, which I understand was denied in 1953.

The general conclusions, as stated by Max Crittenden in his memo to Mr. Selfridge, dated January 8, 1953, still hold. The chance of finding large quantities of mill ore is not good.

As some additional work appears to have been done on the property since DMEA-2837, however, I suppose a field examination should be made.

R D Trace

R. D. Trace

Western Manganese Corporation
C/o Mr. L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

March 28, 1955
Subject: DMEA 3737
Re: Exploration Assistance
Sunset Group or McMillan
Claims

Gentlemen:

The receipt of your application dated March 15, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA 3737 and referred to the Iron and Ferro-Alloys Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

March 28, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region II.

DMEA - 3737 Western Manganese Corporation

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

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

DMEA

1605 Evans Avenue
Reno, Nevada

March 22, 1955

Memorandum

To: Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application, Western Manganese Corporation, L. H. Seagrave, President, 840 General Petroleum Building, 612 South Flower Street, Los Angeles 17, California

Attached are three sets of MF-103 Application for Aid forms relative to above subject. The fourth set has been retained in our files. Also attached is a letter from the owners giving their consent to lien to the present lessee's. We will have to get this consent to lien on our formal forms if a contract is later contemplated.

There was a previous application on this property "Docket No. 2837", and the request for financial assistance was denied July 25, 1953. In the meantime, considerably additional exploration work has been done by the owners, so I believe that a re-examination by the Field Team may be in order.

S. Ricker

Attachments

BUREAU OF MINES
WASHINGTON, D.C.

MAR 28 10 48 AM '55

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
MAR 25 1955

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

Not to be filled in by applicant

Docket No. 3737
Metal or Mineral Manganese
Date Received 3-25-55
Estimated Cost $50,000
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street, Los Angeles 17, California

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

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. See attached marked 1(c).

(*d*) If a partnership, add to the above statement the names and addresses of all partners. Not applicable.

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

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

(*b*) State any mine name by which the property is known. See attached marked 3(b).

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
The interest of Western Manganese Corporation is that of Lessee.

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Copy of the lease and assignment thereof under which Western Manganese Corporation controls the property is attached marked 3 (d).

(*e*) If you own the land, describe any liens or encumbrances on it
There are no liens or encumbrances on said lease.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See attached marked 3 (f).

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

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See attached marked 4(b)

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See attached marked 4 (c).

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See attached report of George C. Heikes marked 4 (d).

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
See attached marked 4 (e).

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore The mineral for which the corporation wishes to explore is manganese.

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See attached report of George C. Heikes marked 5(b)

(*c*) The work will start within 15 days and should be completed within 2 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attached marked 5(d).

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

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). See attached marked 6(a).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. Not applicable.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. Not applicable.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. Not applicable.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. Not applicable.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project Not. applicable.

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated March 15, 1955

WESTERN MANGANESE CORPORATION
(Applicant)

By George C. Heikes
George C. Heikes

(George C. Heikes authorized to make application for corporation, at Board of Directors meeting, March 9, 1955)

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

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

1. (c)

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

WESTERN MANGANESE CORPORATION

Bureau of Mines Administration
RECEIVED
MAR 25 1955

OFFICERS & DIRECTORS

President & Director	Louis H. Seagrave 840 General Petroleum Building 612 South Flower Street Los Angeles 17, California
Vice President & Director	Everett Seaver 403 South Norton Los Angeles, California
Vice President & Director	Harry D. Anderson 2344 - 29th Avenue San Francisco, California
Vice President & Director	Frank A. Smith 264 Columbia Avenue Berkeley, California
Vice President & Director	Dudley Cornell 626 First National Bank Bldg. Albuquerque, New Mexico
Secretary-Treasurer	Edwin E. Hawley 100 Alta Street San Francisco, California
Ass't Secretary-Treasurer	H. B. Libby 840 General Petroleum Building 612 South Flower Street Los Angeles 17, California
Ass't. Secretary	Vera N. Radcliffe 626 First National Bank Bldg. Albuquerque, New Mexico

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

2. General

In accordance with DMEA Order 1, Government Aid in Defense Exploration Projects, this application and all accompanying papers in quadruplicate with name and address on each sheet of application and on all accompanying papers is being filed with the Executive Officer, Defense Minerals Exploration Administration, Custom House, 555 Battery Street, San Francisco, California.

3. (a)

Sixteen unpatented mining claims comprising the Sunset Group, six miles due west of Greenville, Plumas County, California, in Sections 2, 3, and 12, T26N R8E and Section 34 T27N R8E, Mt. Diablo Meridan.

3. (b)

Sunset Group of Mining Claims or McMillan Claims, Seneca Mining District.

3. (f)

There follows the book and page numbers for each recorded location notice in Hall of Records, Quincy, Plumas County, California:

Sunset No. 1	Book 19	Page 8
Sunset No. 2	Book 19	Page 9
Sunset No. 3	Book 19	Page 9
Sunset No. 4	Book 23	Page 184
Sunset No. 5	Book 23	Page 184
Sunset No. 6	Book 23	Page 184
Sunset No. 7	Book 23	Page 184
Sunset No. 8	Book 23	Page 184
Sunset No. 9	Book 29	Page 185
Sunset No. 10	Book 29	Page 186
Sunset No. 11	Book 29	Page 187
Sunset No. 12	Book 29	Page 188
Sunset No. 13	Book 20	Page 186
Sunset Extension 4	Book 11	Page 253
Sunset Extension 2	Book 11	Page 253
Alpha	Book 27	Page 16

The original eight (8) claims covered specifically be the assigned lease (marked 3(a)) have been supplemented by eight (8) additional adjacent claims, automatically falling under the lease, as provided in Section 12 thereof.

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

4. (a)

The sixteen claims are laid out along a contact between tuff and jasper as shown on accompanying Map No. 2 (see attached to 4(c) Heikes).

Pit No. 1 was dug with a 3/4 cu. yd. power shovel and an AC No. 14 Allis Chalmers bulldozer. 14,520 cu. yds. were excavated to expose an ore zone 20 feet wide in a pit 40 feet deep. The ore zone is about 1/2 pyrolusite and 1/2 bull quartz. 250 tons were trucked to the mill. There is ore in the face of the pit ready for mining.

Pit No. 2 had 40,000 cu. yds. excavated to disclose an ore zone 30 feet wide in a pit 30 feet deep. The ore was about 25% pyrolusite nodules in red clay and white tuffaceous shale. 100 tons were trucked to the mill. A small pile of high grade of 10 or 15 tons is at the pit and ore is in the face ready for mining.

Pit No. 3 consisted of open cut and tunnel. 4,500 cu. yds. were exeavated and 600 tons mined from a drift in ore at the bottom of the pit. The ore zone here was 16 feet wide and contained 75% pyrolusite with tuffaceous shale and jasper. 100 tons of ore were trucked to the mill, and about 300 tons is on stockpile at the pit.

All of this area is opened up and is presently accessible for examination and mining purposes.

4. (b)

Past production amounts to 450 tons of mine run ore which is mostly piled up at the pilot mill ready for testing this spring. It is not feasible to estimate ore reserves and grade of the ore now in sight ready for mining as it has not been blocked out on four sides. Possibilities for blocking out ore are very excellent and a program is planned for undertaking this spring.

4. (c)

See attached reports by Kenneth McGriffin dated November, 1953, and by George C. Heikes dated February 26, 1955 - marked 4(c) McGriffin, and 4(c) Heikes.

4. (e)

Availability of manpower:- in good supply locally. Materials and supplies readily available at nearby points.

Equipment:- Corporation owns adequate equipment for mining, except for exploratory shovel and drilling equipment for proposed development.

Water:- Available under lease from Western Pacific Railroad for beneficiation plant. Water can be piped from adequate spring up about 1200 feet from spring below Pit #2.

Power:- Diesel power is used at the mine. Pacific Gas & Electric power installed at beneficiation plant.

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

5. (d)

Supervision of exploration to be under Mr. George C. Heikes. The following is quoted from Who's Who in America, Volume 28:

"Geologist, Anaconda Copper Mining Co., Butte, Mont. 1925-26; chief geol., Giesche Sp. Akc. (subsidiary Anaconda), Katowice, Poland, 1926-30, asst. to mgr. mines, 1930-34; asst. to cons. engr. Phila. and Reading Coal and Iron Co., Phila, 1935-36; spl. agent in charge non-ferrous metal mining, study of productivity of mine labor in U. S., U. S. Bur. of Mines, 1936-37; chief mining engr., Nat. Lead Co., St. Louis, Mo., 1937-41; asst. chief copper and zinc branch, Office of Prdn. Management, Washington, D.C., 1941; dir. zinc div. W.P.B., Washington, D.C. 1942-43; resident mgr. Olin Corp., Aluminum Reduction Works, Tacoma, Washington, 1943-44; dir. aluminum-magnesium div. W.P.B., Washington, D.C., 1944-45; vice pres. Mines, Inc. (subsidiary of Ventures Ltd. Toronto, Can.), 1945-48; mining geologist Kennecott Copper Corp., 1948-49; chief mining br. Industry Div. ECA mission to Greece, 1949-51; chief mining development div., Defense Materials Procurement Agy., Region III (Europe, Middle East, Africa) since 1952, Mem. Am. Inst. Mining and Metall. Engrs., Mining and Metall. Soc. Am., Soc. Econ. Geologists, Candadian Inst. Mining and Metall. Instn. Mining and Metallurgy.

6.(a)

Work can be contracted with a local contractor at the following costs:

Excavating trenches - 25,000 cu. yds. @ $1.50 a yard	$37,500
Core drilling - [illegible],800 feet chert and jasper @ $5.00	4,000
Core drilling - 2,500 feet shale @ $3.00	7,500
Geologic & engineering supervision of drilling	1,000
	$50,000

Estimated cost per cu. yd. excavated:

Powder, fuse and caps	$0.87
Labor drilling-blasting	0.25
Steel and air	0.08
Excavating and moved 100 feet	0.25
Supervision	0.04
Insurance	0.01
	$1.50

3. (a)

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

RECORDED, BOOK 77, PAGE 250,
HALL OF RECORDS, QUINCY,
PLUMAS COUNTY, CALIFORNIA

LEASE

This lease made and entered into, in triplicate, as of this 2nd day of September, 1953, by and between W. J. McMillan and Alice McMillan, 427 La Rue Avenue, Reno, Nevada, hereinafter referred to as Lessors and F. A. Smith of Berkeley, California and T. L. Nye, of Reno, Nevada, hereinafter referred to as Lessees;

WITNESSETH

For and in consideration of the mutual promises and agreements hereinafter set forth, it is hereby agreed and understood by and between the respective parties hereto as follows:

- 1 -

Lessors do hereby represent and warrant that they are the owners of those premises situated in the County of Plumas, State of California, which are more particularly described as follows, to wit:

> Mining claims known as Sunset, Sunset #1, Sunset #2, Sunset #3, Sunset #4, Sunset #5, Sunset extension #1, and Sunset extension #2, located in the Seneca mining district three miles southeast of Almanor station, Plumas County, California.

- 2 -

This lease shall commence as of this date and it shall continue, unless sooner terminated pursuant to the provisions hereof, until, in the opinion of the Lessees, all manganese or other metals or minerals which are recoverable from said land have been recovered. The Lessees agree to commence operations within thirty (30) days of the date of this lease.

- 2A -

Lessees agree to work the claims in a manner necessary to good and economical mining and milling, so as to take out the greatest amount of value possible, with due regard to the safety, development and preservation of said mining premises or claims as a workable mine or mines and to do sufficient work to comply with any requirements of the laws relating to assessment work.

/

- 3 -

As compensation for the rights and privileges of the Lessees hereunder, Lessees agree to pay Lessors ten percent (10%) royalty on all returns from the sale of manganese or other metals or minerals. The value of the ore for the computation of this royalty shall be the mine grade value at shipping point, after freight charges.

(b) Royalty shall be paid not later than ten (10) days after receipt of returns, and Royalty checks, together with settlement sheets, shall be mailed to Lessors at 427 La Rue Avenue, Reno, Nevada. It is agreed that said royalty checks shall be made to the Order of W. J. McMillan and Alice McMillan and that they will make pro-rata distribution of royalty to the other lessors, if any.

(c) For the purpose hereof and particularly for the purpose of determining any amount of royalty due Lessors, or tonnage shipped, the settlement sheets shall be considered conclusive. Royalty shall be determined and paid on the mine grade value of the ore.

- 4 -

The cessation of operations shall be excused if said cessation be caused by Act of God, strikes, riots, inability to obtain labor, inability to obtain supplies, insufficiency of transportation facilities, fire or flood, adverse weather conditions, or by any other cause beyond the control of the Lessees, including any Governmental restriction or Bureaucratic order or regulation.

- 5 -

Lessees are hereby given the exclusive right during the term of this lease, to enter upon the premises hereby demised, for the purpose of prospecting and mining, and any other activity necessary to the proper and efficient conduct of the business.

- 6 -

The Lessees are given the right to use, for the purpose of ingress and egress, all existing roads upon the premises herein described,

or leading thereto, and to construct additional roads, buildings, or any other facility or structure necessary or practicable for the efficient accomplishment of the mining operations to be conducted under the terms hereof, and further shall have the right to use any facility which may assist them in such operation.

- 7 -

Lessees shall retain title to and possession of all machinery and equipment of every nature whatsoever, and of any structure placed upon the premises by them and shall and do have the right to remove same at any time during the life of this lease, or within ninety (90) days after termination thereof, weather conditions permitting such removal at or within that time.

- 8 -

Lessees shall hold Lessors harmless from all liability in connection with material or labor liens. Lessees shall carry Workmens Compensation Insurance against all liability imposed by the Labor Code of the State of California in connection with all employees employed by them upon the premises in connection with the mining operations conducted thereon.

- 9 -

Lessors shall have access to said premises, either in person or by duly appointed agents, at all reasonable time, for the purpose of posting such notices as they may desire to post from time to time.

- 10 -

Any failure on the part of Lessees to carry out the terms of this lease shall be cause for cancellation, and if said failure is not corrected within thirty (30) days after registered mail notice from Lessors to Lessees at P.O. Box #390, Reno, Nevada, this lease shall lapse and terminate and be of no further force and effect, and neither of the parties hereto shall thereafter be under any further obligation to the other under this agreement, save as otherwise herein provided.

- 11 -

The Lessors warrant that the mining claims described herein are free and clear of any encumbrance, and that they have the right to execute the lease, and that they will defend at their own cost and expense all suits and actions against their title to the mining claims, but that the Lessees have the option to defend any such suits or actions and the right to recover the costs of such defenses from the Lessors.

- 12 -

Any additional adjacent claims located and staked by either party during the life of this lease shall become a part of this lease agreement.

- 13 -

Lessees agree to perform the covenants of this agreement or lease to the best of their ability.

- 14 -

Time is the essence to this agreement, and the agreement shall inure to and be binding upon the heirs, executors, administrators, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have set their hands as of this 3rd day of September, 1953.

WITNESSES:

Lessors:

W. J. McMillan

Alice McMillan

Lessees:

F. A. Smith

T. L. Nye

ASSIGNMENT OF MINING LEASE

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, FRANK A. SMITH and E. J. SMITH, his wife, and T. L. NYE and LOIS NYE, his wife, hereinafter called Assignor (whether one or more), for and in consideration of One Dollar ($1.00) receipt of which is hereby acknowledged, does hereby sell, assign, transfer and set over unto WESTERN MANGANESE CORPORATION, a corporation organized and existing under the laws of the State of New Mexico, and having its principal office at 626 First National Bank Building, City of Albuquerque, County of Bernalillo, State of New Mexico, hereinafter called Assignee, all my right, title and interest in and to that certain Mining Lease dated September 2, 1953, from W. J. McMillan and Alice McMillan, lessors, to F. A. Smith and T. L. Nye, lessees, recorded in Book 77, Page 251, of the records of Plumas County, State of California, and covering and demising the following described land, to-wit:

> Mining claims known as Sunset, Sunset #1, Sunset #2, Sunset #3, Sunset #4, Sunset #5, Sunset extension #1, and Sunset extension #2, located in the Seneca mining district three miles southeast of Almanor station, Plumas County, California,

together with all of the rights incident thereto and the personal property thereon, appurtenant thereto, or used or obtained in connection therewith.

And for the same consideration the Assignor covenants with the Assignee, its or his heirs, successors or assigns: That the Assignor is the lawful owner of and has good title to the interest above assigned in and to said lease, estate, rights and property, free and clear from all liens, encumbrances or adverse claims; that said lease is a valid and subsisting lease on the lands above described, and all rentals and royalties due thereunder have been paid and all conditions necessaryto keep the same in full force have been duly performed; and that the Assignor will warrant and forever defend the same

DUDLEY CORNELL
ATTORNEY AT LAW
FIRST NATIONAL BANK BUILDING
ALBUQUERQUE, N. MEX.

against all persons whomsoever, lawfully claiming or to claim the same.

EXECUTED, this 22nd day of ~~June~~ July, 1954.

FRANK A. SMITH

SMITH

T. L. NYE

LOIS NYE

STATE OF CALIFORNIA)
: SS
COUNTY OF Plumas)

Before me, the undersigned, a Notary Public, in and for said County and State, on this 22nd day of ~~June~~ July, 1954, personally appeared FRANK A. SMITH (referred to in lease as F. A. SMITH) and SMITH, his wife, and T. L. NYE and NYE, his wife, to me known to be the identical persons who executed the within and foregoing instrument, and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I hereunto set my official signature and affixed my notarial seal the day and year above written.

My Commission Expires:
August 1st 1956

Notary Public

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MARGUERITE AUSTIN
AUGUST 2, 1954
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VOL. 77 PAGE 253
OFFICIAL RECORDS
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EY CORNELL
ORNEY AT LAW
ST NATIONAL BANK
BUILDING
BUQUERQUE, N. MEX.

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4. (c) McGrif

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

State of the Mines
Bureau of Mineral Administration
RECEIVED
MAR 25 1955

GEOLOGICAL RECONNAISANCE

of the

SUNSET MANGANESE GROUP OF CLAIMS

Plumas County, California

November, 1953

INTRODUCTION:

The nine claims comprising the Sunset Group are located about five air miles northwest of Greenville, Plumas County, California, in a heavily forested upland part of the Plumas National Forest. The elevation is about 6900 feet above sea level. The topograph is gently rolling over most of the property but falls steeply to the northwest.

Work on the property consisted of inspecting the three open pit workings and making a compass and pace traverse across the area.

GENERAL GEOLOGY:

The basement rock in the area is a light brown, sometimes purplish, micaceous shale. Silicification of the shale is not uniform nor is the shale fissile where silicification is at an advanced stage. Where observed, the shale strikes roughly NNE and dips 40-75 degrees west. This shale is similar to that assigned to the lower part of the Calaveras Group of Carboniferous age. The other rocks in the area are quite probably also part of this group.

A softer, less homogeneous shale which is exposed only at Pit #2, may be a gradation phase between the overlying manganiferous hematite-jasper-tuff members and the siliceous shale basement. This shale has small nodules of pyrolusite sparingly distributed near the top of the bed and think stringers of a yellow iron oxide, probably limonite.

The manganiferous hematite-jasper outcrop alignment across the property is nearly coincident with the inconspicuous backbone of the northwesterly trending "ridge" on which the property lies.

The large amount of float from this member found on the gradual southwest slope of the area indicates its continuity at lease between Pit #1 and #2 and is so mapped (See Fig. 4)

Soft dark purplish tuff and tuffaceous shales of irregular attitude are found both below and above the hematite-jasper member near Pit #2. At Pit #1 the tuff is interbedded with platy shale which is similar to the basement shale and appears to underly the not very extensive hematite-jasper. Thin quartz and pyrolusite veinlets which cut the rocks here at

right angles to the bedding are truncated, possibly due to slumping. The tuff is absent at Pit #3.

Except for the hematite-jasper member, outcrops are sparse in the area. The gradual southwest slope is almost devoid of outcrops but dozer cuts have revealed the soft tuff and shale under this thin aluvium cover.

Displacement or/and unconformity between the basement shale and the manganiferous members is suggested by:

(1) The minor drags and bedding slippages in the upper shales and tuffs and the considerable fracturing of the hematite-jasper, particularly at Pit #2.

(2) By the variations of the dip and strikes in the upper members, the dips being generally less than the bsement shale. Differential compaction, shrinking of the hematite-jasper member during solidification and late slumping may explain most of this apparent movement.

ORE DEPOSITS:

Manganese showings in the form of pyrolusite are fairly widespread over the property and, even in the covered parts of the area, manganiferous float material is not uncommon. The main ore zone of the property is associated with irregular beds of red hematite and jasper with contiguous tuffs and tuffaceous shales aligned northwesterly across the property. In the hematite-jasper, manganese occurs in uneven beds and discordant "veins" and pockets and as intimate segregations and disseminations in the rock. In the tuffs and shales hi-grade nodules and concretions, usually coated with limonite, characterize the ore. No manganese is found in the basement shale.

PIT #1:

Hematite-jasper and tuff carrying stringers and pods of pyrolusite appear to be completely surrounded by a platy shale similar to, but less siliceous than the basement shale. Thin stringers of pyrolusite and white quartz cut the bedding of the tuff and shale at the north end of the pit.

The tuff thickens near the middle of the pit and underlies the hematite-jasper here.

PIT #2:

A fair sized outcrop of highly fractured hematite-jasper with lenses and segregations of pyrolusite lies at the north edge of this pit and is cut by a thirty (30) foot deep shaft collared in the bottom of the pit.

This shaft, on the south side of the pit, cuts about fifteen (15) feet of soft, dark purple tuff and tuffaceous shale carrying 10%-15% (estimated) of pyrolusite in nodules and seams. The west dipping underlying hematite-jasper member appears to increase in manganese content with depth, the bottom five (5) feet of the shaft carrying about 30% pyrolusite. The

PIT #2 (cont'd):

steeply dipping contact between the tuffaceous and hematite-jasper members may be a bedding plane fault as slicken-sided surfaces were noted in the contact zone.

A prospect pit about 250 feet northwest of Pit #2 has exposed the manganiferous tuff-shale member which grades downward into more siliceous rocks. Nodules and stringers of pyrolusite with limonite coatings were noted in the bottom of the pit.

PIT #3:

A 30-40 foot thick bed of southwest dipping hematite-jasper carries pods and segregations of pyrolusite throughout most of the upper part. Near the top of the member, thin beds of hi-grade ore, with less than 5% silica, widens at the bottom of the pit to 10 (ten) feet, with 25% or greater pyrolusite. Limonite coatings and encrustations occur with the ore. Drill holes eight (8) feet deep - one to the southeast along the strike of the bed and another vertical - are still in the ore at the bottom.

The bottom 2-3 feet of the soft overlying shale carries small nodules of pyrolusite. White quartz veinlets cut the hematite-jasper and the pyrolusite, usually at right angels to the stratification.

ORIGIN OF THE ORE DEPOSITS:

From the intimate relationship between the tuff, the hematite and jasper and the manganese, it can be inferred that the mineralizing sequence here was more or less continuous and dated in geologic time by the deposition of the tuff. The deposition basin in which the tuff was deposited may have been rising, and, therefore, more limited as the tuff contains very little fine shale material above the first few feet but does contain shale fragments, possible erosional.

With a shallow, more limited basin and a fine tuff bed, the usual explanation for the origin of chemical deposits of silica, manganese and iron might apply here. Acidic waters, laden with colloidal silica and iron and/or sulphate solutions of iron and manganese will, under proper reducing conditions, precipitate the silica and oxides of iron and manganese. The large amount of silica here present may have been introduced by more solvent alkaline solutions.

Should alkaline waters with high silica content have been present with the introduction of sulphate solutions of iron and manganese the schedule of precipitation for the iron, silica and manganese might be:

(1) The alkaline solutions precipitate the MnO_2 quite rapidly at first.

(2) With decreasing alkalinity, colloidal silica and iron oxide will be precipitated.

(3) The tuffs, being fine and porous, would tend to give up silica

with alkaline solution and provide alkalies from the feldspars for the precipitation of the MnO_2 in acid solutions, hence tend to be a balancing factor. (The tuff, not definitely identified, is probably thyolite.)

Though not necessary to the sequence, the silica bearing alkaline solution idea would have intensified the precipitation processes. This, along with temperature variations and other factors, could have been responsible for the three different types of manganese deposits which occur here.

The thin beds of nearly pure pyrolusite represent periods of increased alkalinity; hence, rapid precipitation. The pods and irregular disseminations in the hematite-jasper members were formed under conditions more favorable for colloidal precipitations; e.g., lowering of the temperature. The third type - the concretions or nodules, were formed after complete precipitation was achieved by the then shallow circulating waters of the depositional basin; and now, by the cooler descending waters.

Enrichment processes on all three types of deposits are in force today. The moderately dipping manganiferous hematite-jasper member, strongly fractured and in proximity to the manganiferous tuff-shale beds, affords excellent opportunities for enrichment as the ground water level is at least fifty (50) feet in this area.

EXPLORATION AND DEVELOPMENT:

As the pyrolusite occurs in place at widely separated points in the area, the proof of continuity between these showings becomes the pillar upon which future operations, involving large tonnages, must be based. The area between Pits #2 and #3 should be systematically laced by dozer cuts across the alignment. Churn drilling down dip from the hematite-jasper member, if exposed, might be warranted even though no great showing of pyrolusite is revealed by the cuts.

A considerable ore is already revealed at Pit #2; down dip drilling might be warranted here also.

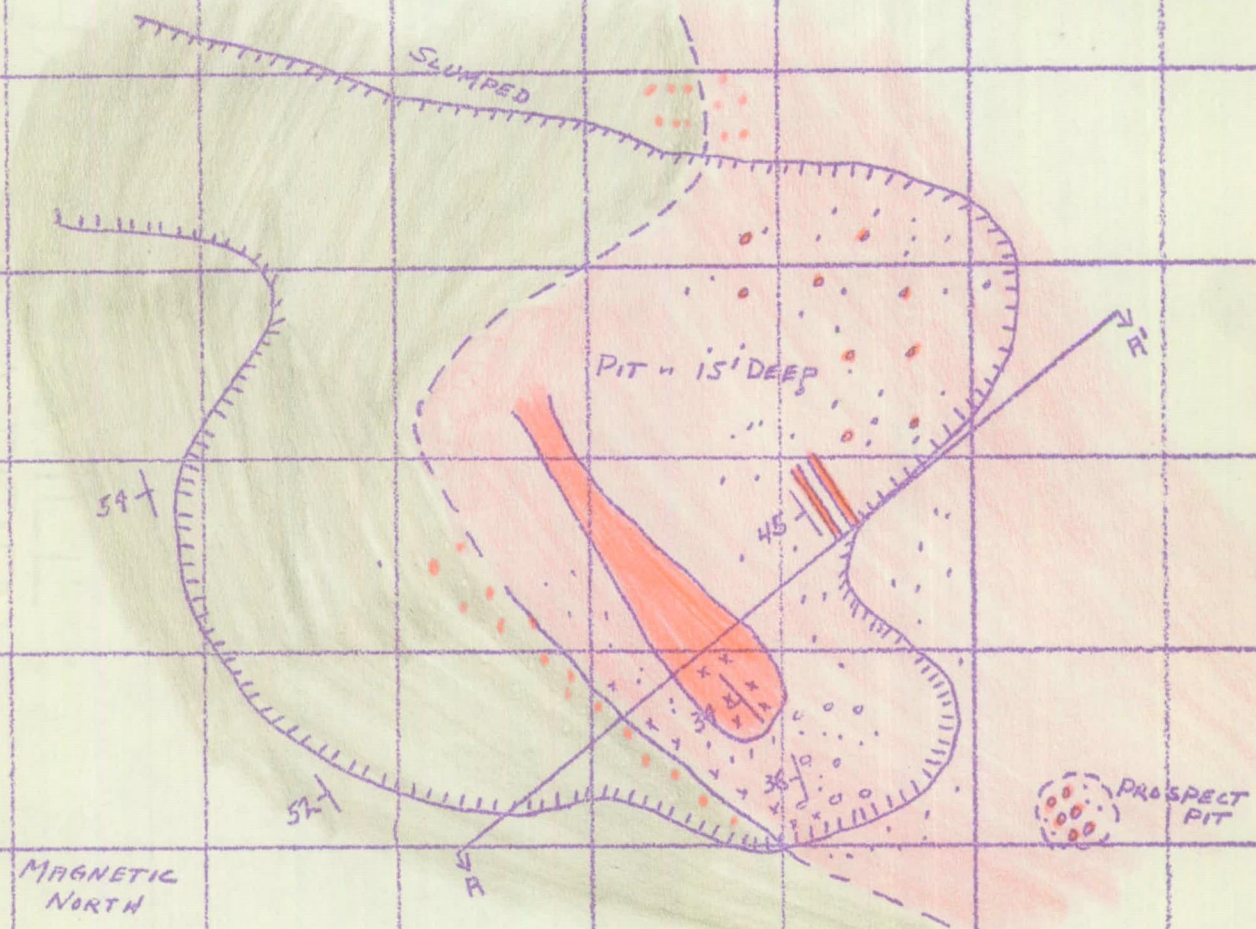
At Pit #3 the ore appears to improve with depth; hence, down dip drilling might be informative here, also. Since the pit is at the edge of the steep northwest slope, dozer cuts or blast holes on this slope might reveal a lower horizon to this ore body.

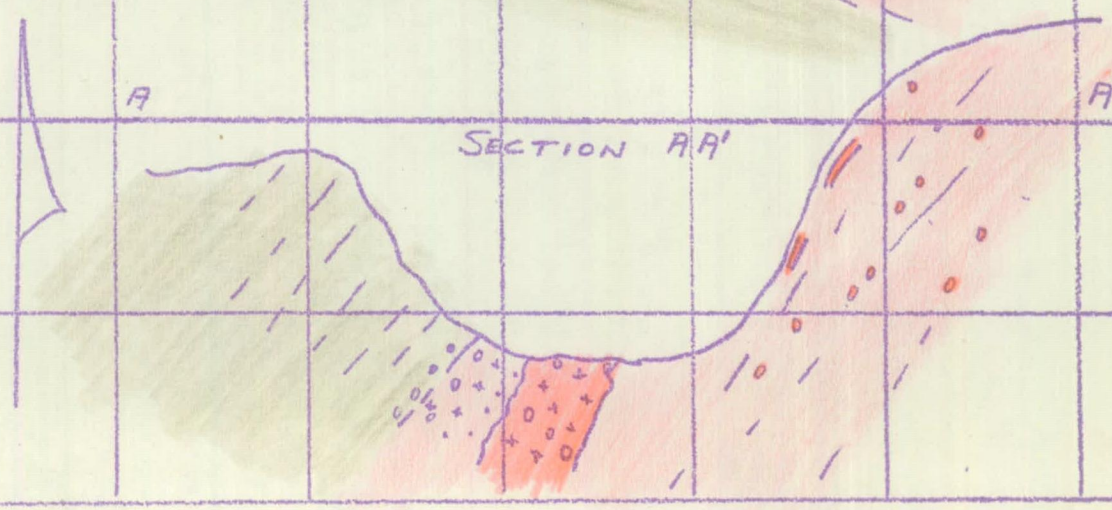
The pyrolusite showings in the southern part of the area, just north of the spring, were not correlated with those along the hematite-jasper alignment. Should the upper tuff-shale beds dip shallowly to the southwest as suggested in the prospect pits near the cabin and Pit #2, and by the subdued topograph of this southwest slope, then the mineralized horizon may be the same and continuous between the two parts of the area. More geological work is needed here, particularly.

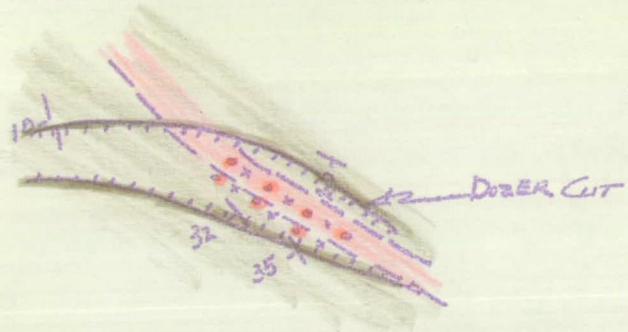
November 1953.

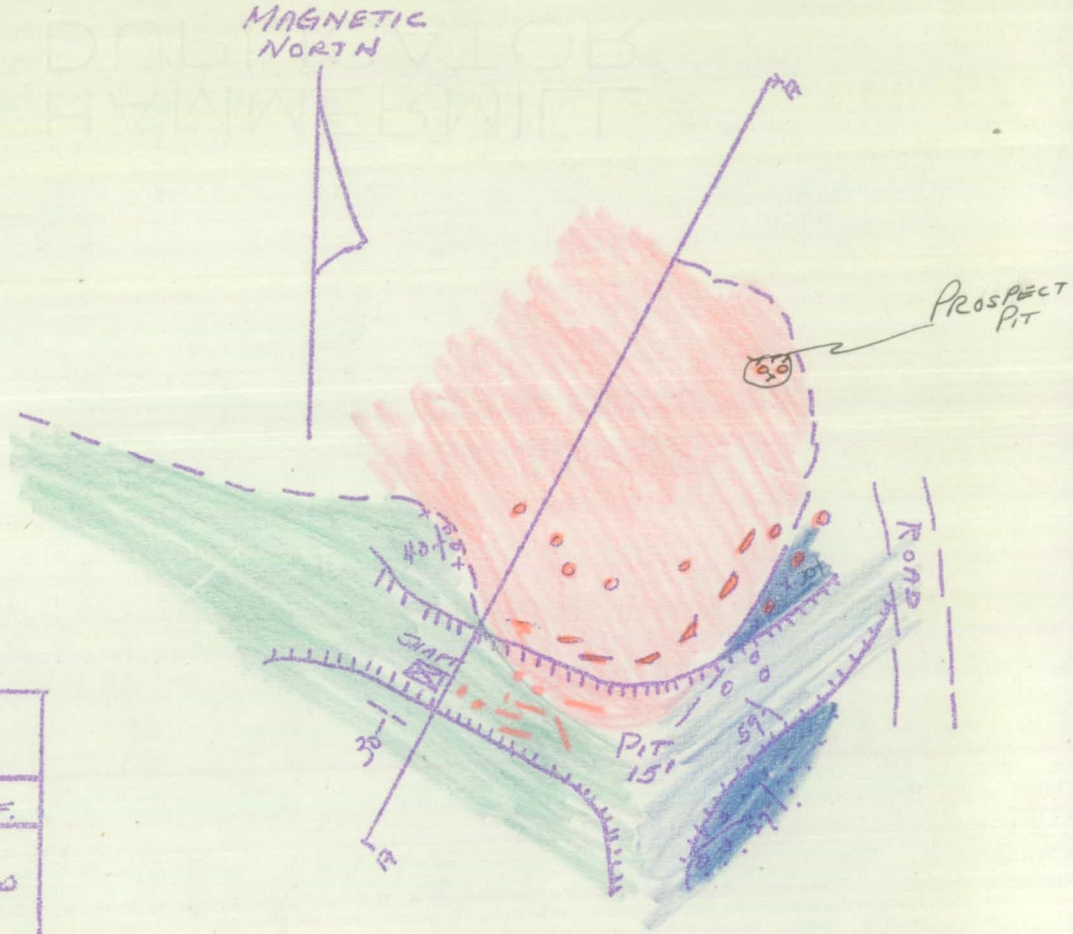
Kenneth McGriffin
Geologist

LEGEND	SUNSET CLAIMS SEC 2, 11, 3 T20N, R8E
J — RED HEMATITED JASPER Sb — BUFF SHALE	PLUMAS COUNTY, CALIF.
PYROLUSITE lens or bed " SEGREGATIONS + NODULES LIMONITE? CONTACTS	GEOLOGIC MAP OF PIT #3
PIT BOUNDARY	1" = 10'
	COMPASS-PACE TRAVERSE By K.M. Nov 1962 FIG 1

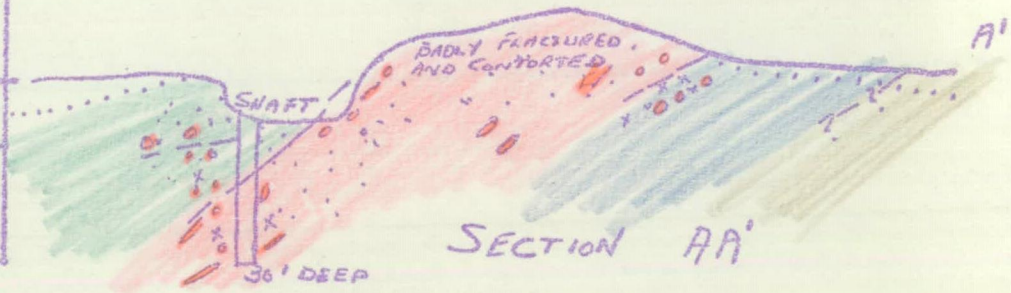




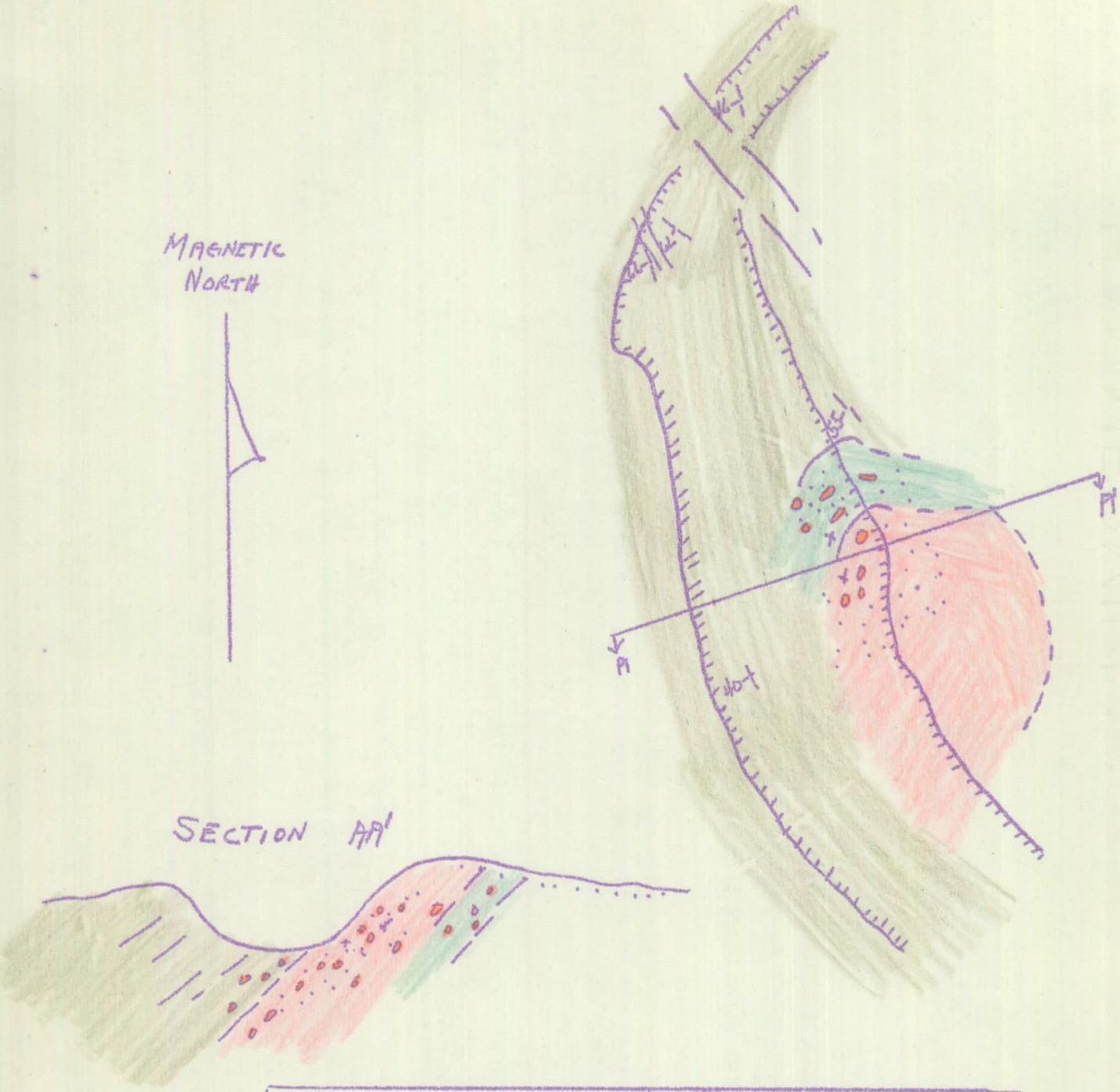




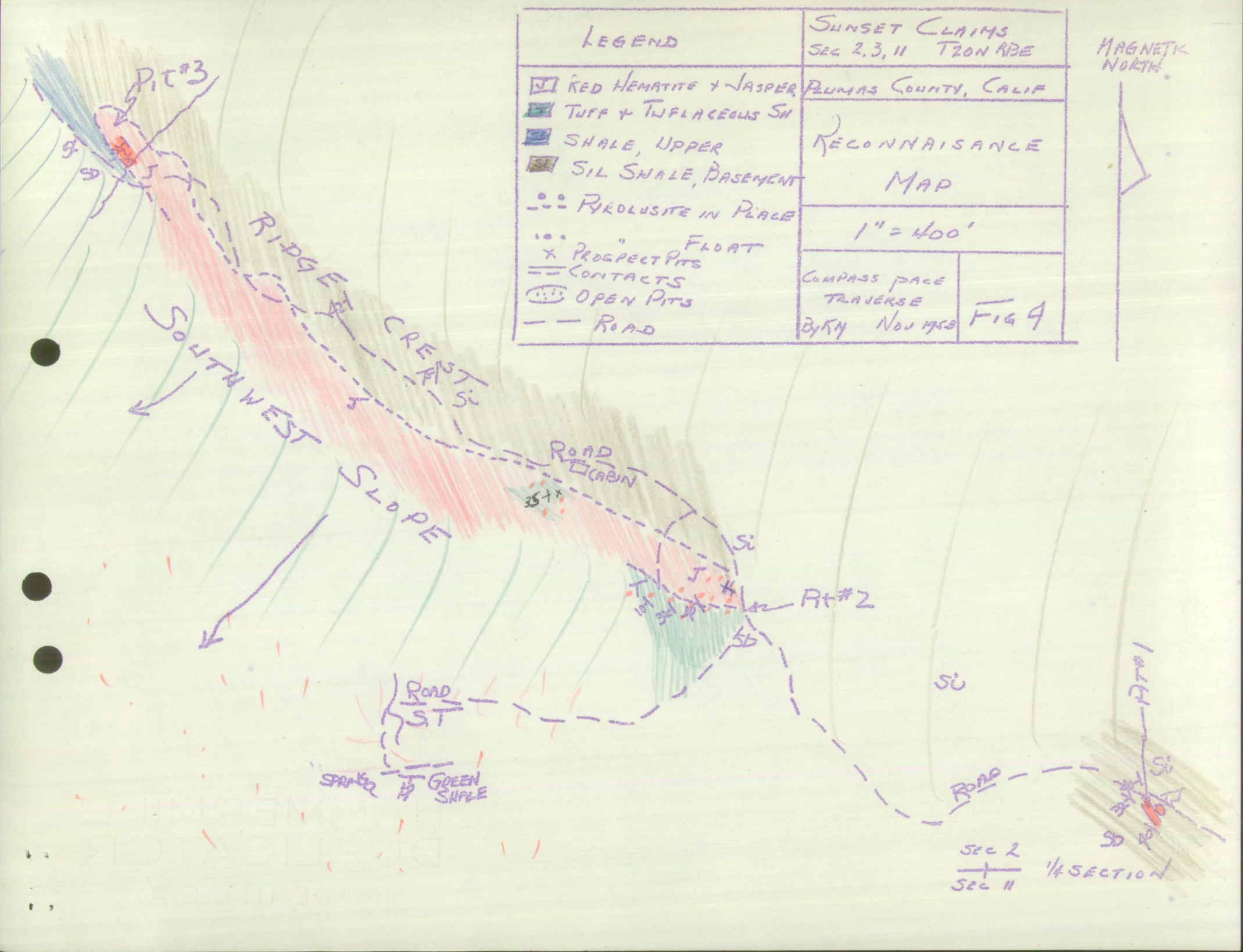
LEGEND	SUNSET CLAIMS SEC. 2, 11, 3 T20N, R8E
J — RED HEMATITE + JASPER T — TUFF + TUFFACEOUS SH. SB — BUFF SHALE SI — SIL SHALE - BASEMENT PYROLUSITE LENS & RED " SEGREGATION + NODULES LIMONITE? CONTACTS PIT BOUNDARIES	PLUMAS COUNTY, CALIF. GEOLOGICAL MAP OF PIT #2 1" = 40' COMPASS-PACE TRAVERSE BY KM NOV 1953 FIG 2



SECTION AA'



LEGEND	SUNSET CLAIMS SEC 2, 11, 3 T20N, R8E PLUMAS COUNTY, CALIF.
J JASPER, SOME HEMAT. T TUFF Si SHALE PYROLUSITE LIMONITE CONTACTS PIT BOUNDARY	GEOLOGIC MAP OF PIT #1 1" = 40'
	COMPASS - PACE TRAVERSE BY KM. NOV 1953 — FIG 3


LEGEND
RED HEMATITE + JASPER
TUFF + TUFFACEOUS SH
SHALE, UPPER
SIL SHALE, BASEMENT
PYROLUSITE IN PLACE
" FLOAT
PROSPECT PITS
CONTACTS
OPEN PITS
ROAD
SUNSET CLAIMS
SEC 2, 3, 11 T20N R8E
PLUMAS COUNTY, CALIF
RECONNAISANCE MAP
1" = 400'
COMPASS PACE TRAVERSE
BY KM NOV 1958
FIG 4
MAGNETIC NORTH
Pit #3
RIDGE CREST
SOUTHWEST SLOPE
ROAD
CABIN
Si
Pit #2
Sb
SPRINGS
GREEN SHALE
Pit #1
SEC 2
SEC 11
1/4 SECTION

4. (c) Heikes

4. (d)

5. (b)

WESTERN MANGANESE CORPORATION
c/o L. H. Seagrave, President
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

Preliminary Report on the Sunset Group of Mining Claims Western Manganese Corporation

Plumas County, California
by
George C. Heikes
Feb. 26, 1955

Introduction

At the request of the Board of Directors of the Western Manganese Corporation, an examination was made on September 15 and 16, 1954, of the Corporation's "Sunset Group of Mining Claims" and also the pilot mill, then under construction. The object of the examination was to assemble data in order to make recommendations to assist the management to put the project on a profitable production basis. A number of verbal recommendations were made in September and October, 1954, on the mining and milling, which were carried out before the winter set-in. On December 15, 1954, the management decided to conserve working capital by shutting down all operations until an improvement in the weather in the spring of 1955. In the interim, several meetings were held to outline plans for the future. The following report is to describe the geological features of the ore deposits, the metallurgical character of the ore and the concentrates, and to outline the program for the next few months.

Location

The ~~fifteen~~ sixteen unpatented mining claims, of twenty acres each, comprising the Sunset Group, are six miles due West from Greenville, Plumas County, California, in Sections 2, 3, and 12 T26N R8E and Section 34 T27N R8E, Mt. Diablo Meridan. These mining claims are in the well-timbered part of the Sierra Nevada Range, 3 miles Southeast of Lake Almanor and are at an elevation of 6000 to 6200 feet. The mill is on a siding of the Western Pacific Railroad at Almanor Station.

Unless the General Services Administration arranges for a manganese ore stockpile to be somewhere nearer to the property, the nearest present G.S.A. Stockpiles are at Wendon, Arizona, and Deming, New Mexico.

Summary

Maps No. 1 and No. 2 accompanying this report show the general geology and the location of the property. As can be seen on Map No. 1 a large number of manganese deposits have been uncovered along the large overthrust fault trending Northwesterly. The Arlington, Braito (Timmons) and Sobrero deposits, also belonging to the Western Manganese Corporation are in the southeast,and the Sunset Group are in the northwest part of the same manganese belt. During 1940 to 1952 over 36,000 tons of pyrolusite ore containing 40 to 50% manganese and 9.0% silica were shipped from the Braito property. No detrimental elements such as copper, lead or alumina were contained in the ore. Toward the end of this mining period, the Sunset Group to the northwest was found to be more easily accessible, to have ore suitable for low cost mining methods; consequently, became of main interest to the company.

During the last year and a half, exploratory work on the Sunset Group has been confined to the contact between tuffaceous shale and jasper as shown on Map No. 2. Three main areas, approximately 2000 feet apart, have been explored, and many additional outcroppings have been discovered.

In No. 3 pit, a 3/4 yd. Power shovel and an Allis Chalmers AC 14 bulldozer were used to mine the outcrop, and 250 tons of ore resulting therefrom was trucked to the mill. When snow set in, the ore at the floor of the pit was 40 feet below the original surface and was 20 feet wide, containing about half pyrolusite and half bull quartz. At No. 2 areathe pit was 30 feet deep and 30 feet wide, the ore was 20% high grade pyrolusite nodules in red mud and white shale; one hundred tons of this was trucked to

the mill. At No. 1 area an inclined shaft at about 30 degrees was driven 80 feet to a depth of 45 feet below the surface, into a good showing of ore occurring on contact between a jasper foot-wall and a tuffaceous shale hanging wall. The ore in the face is 16 feet wide containing 75% pyrolusite in tuffaceous shale. About 100 tons of this material was trucked to the mill.

As a result of this prospecting work 450 tons of ore were stockpiled at the mill.

Before winter shut down the mine and mill, the preliminary treatment of part of this tonnage, in the 30 ton per 24 hour mill, resulted in 30 tons of concentrate assaying 42% manganese, 11% silica and no detrimental impurities.

what part?

The work accomplished to date indicates the Sunset Area is worth further investigation; that the ore deposits are suitable for large scale surface mining methods; that the mineralization can be concentrated to a product salable to the chemical and metallurgical industries on the west coast or to the U.S. Government for its manganese stockpile.

Recommendations

In order to obtain the capital required to put this project into large scale operation, accurate information is required as to ore reserves and grade of ore. Therefore, it is recommended that, as soon as the weather permits, a systematic exploration and development program be conducted on a basis somewhat as follows:

1. That systematic trenching and drilling be done along the mile of tuffaceous shale and jasper contact as shown in Sec. 2 on Map No. 2. For example, a suitable dragline might be obtained on a rental-purchase or contract basis equipped with at least a 1½ cu. yd. manganese steel scoop to enable cutting 10 large trenches 200 feet long and up to 20 feet deep across

the contact, and 50 auxiliary trenches 100 feet long and 15 feet deep for blocking out ore.

2. That a suitable rotary drill be obtained on a rental-purchase or contract basis to determine the continuity of ore at depth. Exploration could be started at a known outcrop such as Pit area No. 2, and trenches be cut every 500 feet. If ore was disclosed in one of these large crosscut trenches, then the ore could be followed along the strike and blocked out in a suitable manner to determine volume and grade. Rotary drilling should also be done to ascertain continuity of mineralization in depth.

It is recommended that the following work be done this spring:

10 large trenches	200' long x 4' x 20' deep	$24,000
50 small trenches	100' long x 4' wide x 15' deep	9,000
30 drill holes ave, 100' deep at $3.00 per ft.		9,000
		$42,000
Shovel & Rotary drill rental, or contract during this development, period of 2 months, plus working capital		8,000 est.
		$50,000

It is expected if the above work is successful it will result in finding and blocking out enough ore, which when mined and concentrated, will produce 50,000 or more tons of salable concentrates, averaging over 40% Manganese and less than 15% silica.

History

Three years ago Frank A. Smith, 264 Columbia Avenue, Berkeley 8, California, and T. L. Nye, Reno, Nevada, were diamond drilling and investigating properties in search for commercial deposits of iron, manganese, chromite or fluorspar. As a result of this effort it was decided that the Sunset Group of claims near Greenville, Plumas County, California was the most likely of over 50 properties examined in British Columbia and seven

of the western states. This particular deposit was considered favorable because of the accessibility of the Sunset Group to the railroad, the availability of power and labor, the amendability of the ore deposits to low cost mining methods, and the relative ease to beneficiate this ore to a salable product as compared to other ores tested. About a year ago Louis H. Seagraves, of Los Angeles, California, and Dudley Cornell of Albuquerque, New Mexico, became interested and purchased the Nye interest for $65,000. Thereafter, they purchased additional mining equipment, built the pilot mill, and financed the mine exploratory work, which was done under the direction of Frank A. Smith.

Geology

Plumas County, California, is an important mineral producing area in which there are mines which have produced gold, copper, manganese, chromite and other minerals. There is a large northwesterly striking regional thrust fault passing through the area with which a large number of manganese deposits are apparently associated (see Map No. 1). In the vicinity of the manganese deposits, the formation consists of metamorphosed sediments and metamorphosed volcanic beds of Carboniferous Age. Not enough work has been done to ascertain the origin of the manganese deposits. The ore appears to be associated with faulting and locally occurs in a formation of alternate beds of silicified volcanic tuff and jasper. The mineralization consists of pyrolusite, wad, and a black carbonate mineral associated with some hematite, limonite, bull quartz, and silicified tuff. One of the peculiarities of the mineralization, is that the manganese occurs in nodules surrounded by limonite, which does not seem to penetrate into the manganese, as the nodules average 50-60% manganese with .009% iron.

It is expected that the ore will follow a definite structural pattern during trenching and drilling. Therefore, during the trenching and

drilling of this deposit, careful geologic mapping should accompany the trenching and drilling. If a pattern does exist, it will appreciably reduce exploration expense and help in finding new ore.

The ore appears to follow fault zones along the contact between jasper and tuff. Not enough information is available to predict the size and shape of the ore deposits to be expected, but up to now ore bodies 30 feet below the surface up to 20 feet wide have been opened by exploratory work.

As shown on Map No. 1 the manganese ore outcrops have been traced for over 13 miles along the large overthrust fault. The discovery of many ore bodies of manganese along this zone are not unlikely; therefore, the potential possibilities are considered very good.

Mineralization and Beneficiation of the Ore

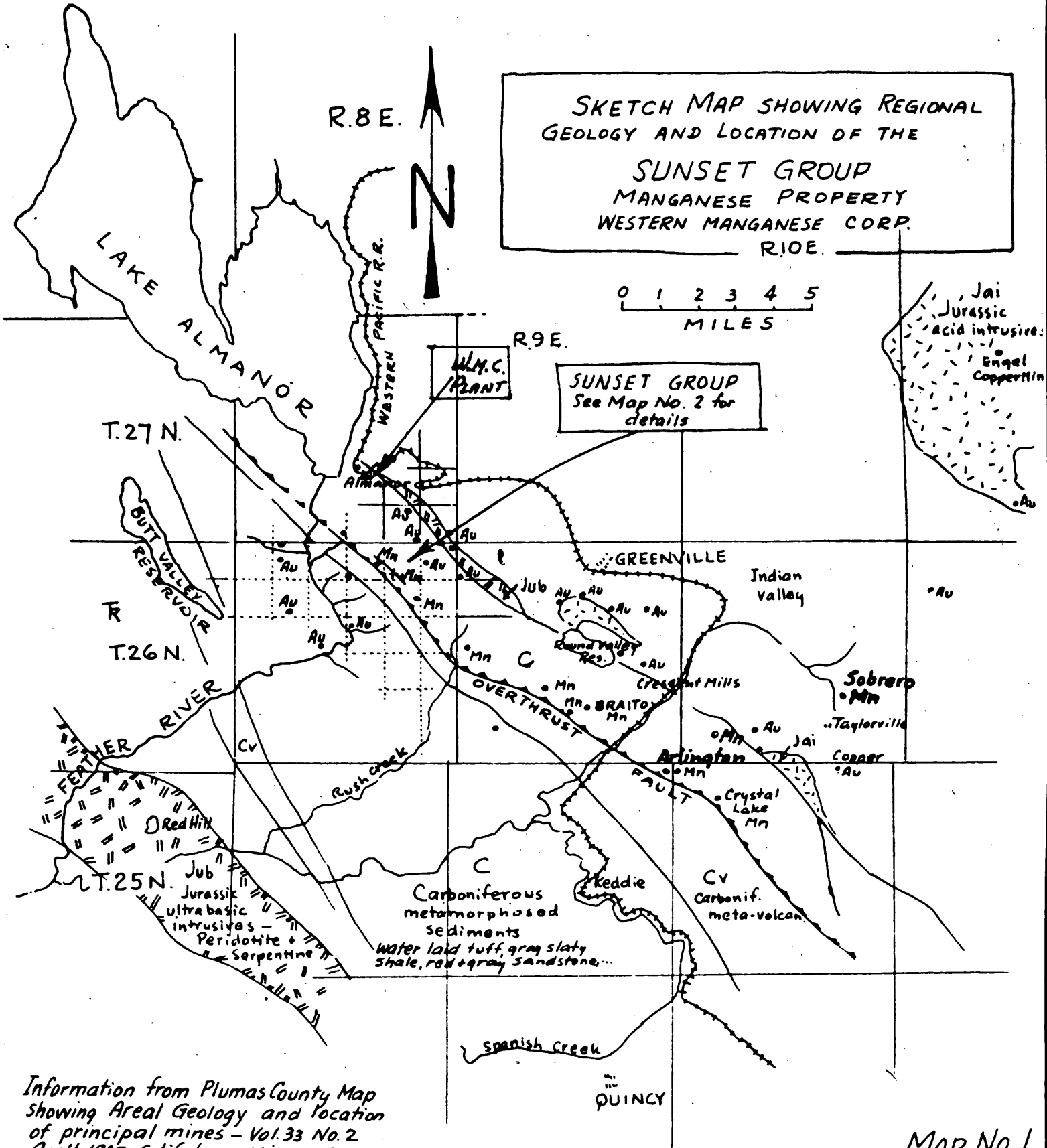
The ore is made up of nodules or stringers of pyrolusite, wad, and other manganese minerals in quartz, and tuff. Some of the nodules are coated with limonite. The beneficiation of this ore consists of segregating the pyrolusite from quartz, tuff, limonite, and jasper.

By crushing and grinding the ore to 3/4 inch size, most of the pyrolusite and wad can be freed from the jasper and the quartz. Thus, after careful screening of the ore, and possibly screening out the fines under 1/4 inch, the separation of the heavier manganese minerals can be made on jigs or in a heavy media separation plant, and a good recovery of the manganese can thus be made. The pilot work to date has been done with the assistance of the Western Machinery Co. of San Francisco, and the pilot plant flow sheet constructed accordingly. It is expected that improvements will be made in the pilot mill in the spring to better the recovery, increase production, and improve the concentrate. The eventual goal is to produce a product not only desirable for the U.S. Stockpile, but one that will be in demand by local chemical and metallurgical plants on the West Coast that will be in competition with imported manganese ore.

what

Feb. 26, 1955.

George C. Heikes
Consulting Mining Geologist
Los Altos, California

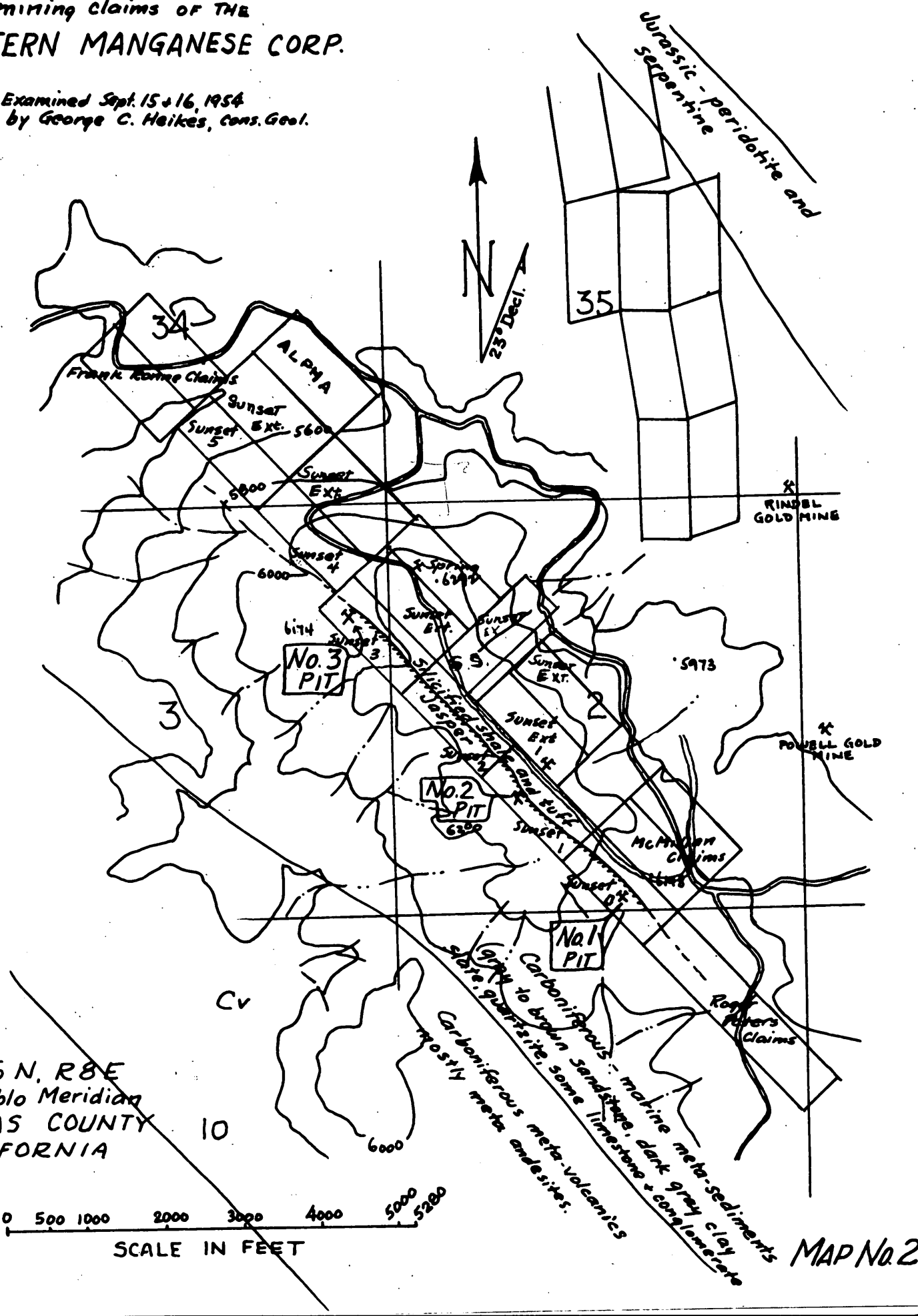


Information from Plumas County Map Showing Areal Geology and location of principal mines – Vol. 33 No. 2 April 1937, Calif. Journ. Mines & Geology.

MAP No. 1

Sketch Map showing SUNSET GROUP
of 16 mining claims of THE
WESTERN MANGANESE CORP.

Examined Sept. 15 + 16, 1954
by George C. Heikes, Cons. Geol.



MAP No. 2

Western Manganese Corporation
840 General Petroleum Building
612 South Flower Street
Los Angeles 17, California

Dear Sirs:

The undersigned are the owners of sixteen unpatented, recorded mining claims comprising the Sunset Group, six miles west of Greenville, Plumas County, California, in Sections 2, 3, and 12 T26N R8E and Section 34 T27N R8E, Mt. Diablo Meridian.

These claims were leased under the terms of a lease dated September 2, 1953 to F. A. Smith and T. L. Nye, which lease was subsequently assigned to Western Manganese Corporation, under date of July 22, 1954. Said assignment was recorded in the Official Records, Plumas County Records, August 2, 1954.

The undersigned hereby, as owners, give their owner's conset to Lien in accordance with application for $50,000.00 aid in an exploration project on said leases, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended.

In witness whereof, the undersigned have set their hands this 18th day of March, 1955.

W. J. McMillan

Witnesses:

F. A. Smith

Alice McMillan

Alice McMillan