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DMA Docket No. DMEA-2837

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

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 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 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

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

400 FILE COPY
SURNAME:

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

Rutledge
Martin
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Dalhuff

Memorandum

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

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

(1) Wait for Op. Comm. to clear

(2) Ask Commodity men for their reviews. Tell them Kantor is anxious to come in and discuss the case

(3) Tell Selfridge as soon as we are ready to talk to Kantor

WSM
6/22/53

Mr. Clem
Mr. Dodge

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

Office of
DMEA Field Team
Region III

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

Air Mail

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.

Closed A.C. 6-22-53

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
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

GCH 6/24/53

DMEA-2837, Sunset Mine

Plumas County, Calif.

- Manganese -

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

June 9, 1953

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 30 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	12-13-49	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	$62.80	$34.72
Per dry ton	$22.90	18.60	13.95	9.90	4.45	2.56

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	N85°E	-30°	150
" "	7	N85°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.

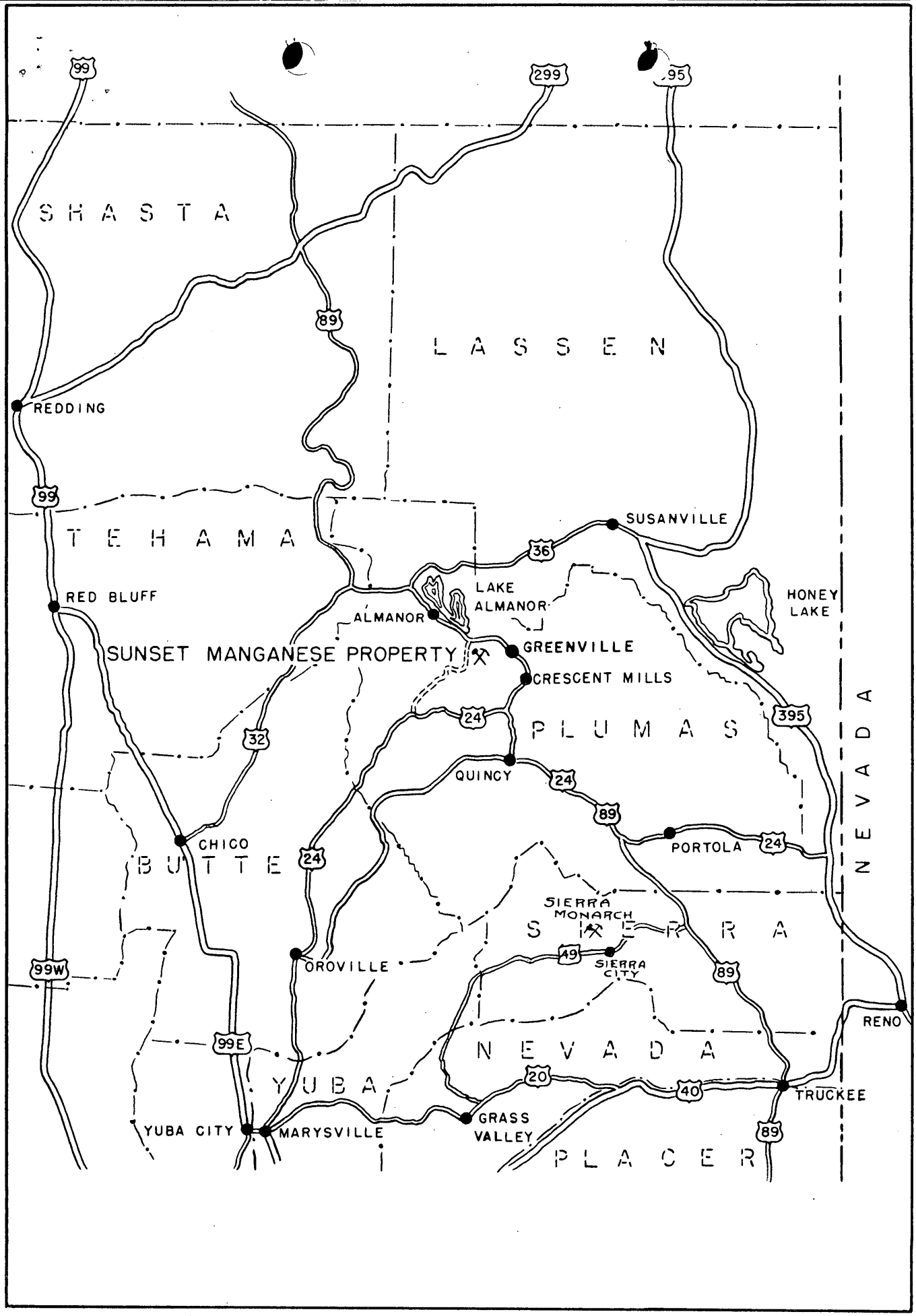

Figure 1.- Location map.

Summit Petroleum

260-foot X cut
150-foot drift
gain 100 feet of rock

Summit #2

100-foot drift
200-foot drift

Location of holes not shown

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 1-28-53

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Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 28 1953

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 surface 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.

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

January 15, 1953

Memorandum

To: George Sefridge

From: E. J. Gealy

Subject: Production of manganese bearing material from Sunset Manganese Claims, Plumas County, California

Records of the Bureau of Mines indicate a shipment of 70 gross tons of 11.8 percent Mn, dry basis by Utah Construction Co. to Geneva Steel Co. in 1950. The leases were surrendered in 1950. No record of other production.

IN REPLY REFER TO:

G-MD-CF

Docket

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

GCS
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."

Copy retained 400

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 to 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 Jr

Max D. Crittenden

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 7 1953

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

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

Not to be filled in by applicant

Docket No. DMEA-2837
Metal or Mineral
Date Received 1/7/53
Estimated Cost
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: _____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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)?

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

☐ 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 DECEMBER 30, 195[illegible]

SUNSET MINING CORPORATION
(Applicant)

By [illegible]
President

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

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

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

ADDENDUM 1

1. Sunset Mining Corporation
c/o Albert Hilliard
Byington Building
Reno, Nevada

(b) Corporation; incorporated under the laws of the State of Nevada.

(c) Irvin Kantor--President--Hotel El Cortez, Reno, Nevada

Arnold M. Phippen--Vice President--812 N. Virginia St., Reno, Nevada

Syd B. Kantor--Secretary-Treasurer--200 W. 86th St., New York City, N. Y.

3. The property to be explored consists of eight unpatented lode mining claims, each 1500 ft. long and 600 ft. wide. See attached map for location of claims. The claims are recorded as follows in the Plumas County, California recorder's office:

Sunset.	.Vol. 20	Page 326
Sunset #1	.Vol. 19	Page 8
Sunset #2	.Vol. 19	Page 9

Sunset #3	Vol. 19	Page 9
Sunset #4	Vol. 23	Page 184
Sunset #5	Vol. 26	Page 149
Sunset Extension	These claims were located during a recent survey of the property and are in the process of being recorded.	
Sunset Extension #1		

(b) Sunset Mine.

(c) Lessee.

(d) Copies of the mining lease and option are included with this application.

(e) There are no liens or encumbrances on the property.

(f) Book and page numbers are included in the description of the claims.

4. (a) A limited exploration program is now in progress. The open pits on the Sunset #3 and Sunset #2 claims have been deepened so that accurate samples may be obtained. The area around the pit on Sunset #2 claim has been cleared of brush and trees. The roads have been bladed and improved. The mine workings consist of open pits and trenches on the Sunset, Sunset #2, Sunset #3 and Sunset Extension. All these pits are immediately accessible by car. The present exploration work is

4. (a) Continued

being done by the applicant.

(b) No ore is being mined at the present time, although the applicants contemplate mining and shipping ore from the Sunset #8 pit. Some ore was mined during World War II by the Utah Construction Company. Records of these shipments are not available.

No ore reserves are blocked out.

(c) See accompanying map and report.

(d) A good, unpaved road, maintained by the Forest Service and Plumas County, crosses the property. All mine workings are accessible by car on roads built and/or maintained by the applicant. All roads are in excellent condition.

Ore shipments will be hauled approximately 8 miles to Canyon Dam, Plumas County, California, where loading facilities are available on the Western Pacific Railroad.

Residences for employees are available at Canyon Dam or at Greenville, California, 19 miles from the mine. Supplies may be obtained at Greenville; Quincy, 43 miles; Susanville, 45 miles; or Reno, 125 miles.

(e) No difficulty is anticipated in securing employees. Because of the large lumber companies which operate

4. (e) Continued

in the vicinity many workers reside in this area. The applicants have always been able to hire as many men as were needed for the previously mentioned exploration work.

Materials, supplies and equipment are available from neighboring towns. Equipment salesmen have assured the applicants of reasonably prompt delivery on all heavy equipment.

No power is available at the property at the present time. Power requirements will be met by stationary power plants erected at the mine.

Water is available from a spring located approximately 2400 ft. SW of Sunset claim #2. The flow of this spring is estimated at 500 gallons per minute.

5. (a) Manganese.

(b) A claim map is included as part of this report. The location of open pits, cuts and outcrops are shown on the map. The locations of the proposed shaft, drifts and crosscut are also shown.

A geologic map is not included as making such a map would entail considerable trenching and open cut mining because of the covering of vegetation and soil. See enclosed report for proposed exploration work.

5. (c) The work will start within 10 days and be completed within 24 months. Active exploration work will be done during 7 months of each year. The heavy snow fall during the months of December, January, February, March and April makes operations during these months extremely difficult, if not impossible. The period of active exploration work will thus cover 14 months.

(d) Irvin Kantor--President

49 years of age. Born in New York City, N. Y. College education (Cornell) 1923. Married. Has had over twenty-five (25) years of experience in the building and construction industry and in the manufacture of building materials, all in executive capacity; after college he became associated with his father's and grandfather's building organization, founded in 1886, and was thoroly trained in all phases thereof including management. Has had broad substantial experience in organization planning, administrative work, economics, large-scale finance and the management and supervision of large groups of technical and skilled employees.

Arnold M. Phippen--Vice President

The general supervision of this operation will be under the direction of Arnold M. Phippen, mining engineer and head of the field operation for the Sunset Mining Corporation (manganese). Formerly he was with the Dixie Manganese Mining Corporation of Tennessee.

PROPOSED EXPLORATION WORK

Stage 1

The ore body on the Sunset No. 2 claim appears, at present, to be the largest on the property. The operators propose to sink a 7' x 5' vertical shaft 100 feet in the footwall, or west side of the vein. It was originally proposed to sink the shaft in the hanging wall but additional study indicates that a footwall shaft will be easier to sink and be of greater value in the event the shaft is later used for production. It is extremely difficult to determine the dip of the vein, but it appears to vary from vertical to 70° to the east.

A 50-foot crosscut will be driven from the 100 ft. level to intersect the vein. A 150 ft. drift will then be driven northward along the strike of the vein. These workings should expose enough ore to allow an estimate of the possible tonnage. It may be necessary to do additional crosscutting and raising but such is not anticipated at this time.

This particular ore body cannot be prospected by core drilling because the ore is too soft and friable to core.

Stage 2

The ore bodies on the Sunset No. 3 and Sunset Extension claims may be prospected by core drilling. The ore is much harder and more massive than the ore on the Sunset No. 2 claim.

The operators propose to drill two vertical and three inclined holes on the Sunset Extension claim and one vertical and one inclined hole on the Sunset No. 3 claim. All holes will be drilled to a depth of 100 feet. The core drilling will be done by contract. The accompanying map shows the location of the holes.

Stage 3

Trenching

Numerous outcrops along the strike of the vein indicate that the ore body is more or less continuous

Stage 3 - Continued

along the length of the claims. It is therefore proposed to dig a number of trenches by bulldozer across the vein.

Any ore bodies uncovered by the trenching operation should be further prospected by core drilling. However, a s no estimate can be made as to the amount of core drilling necessary in connection with the trenching, any proposals for such drilling will have to be made after the trenching is completed.

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UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

EXPLORATION COSTS

The costs of exploration are based on current wage rates, supply and equipment costs.

1. Sinking shaft: total 100 ft.; 5 day week, advance 2 ft. per day = 50 days = 10 weeks = 2½ months. Wages: Miners $2.00/hr.; muchers $1.73/hr.; hoistman $2.00/hr.; timberman $1.73/hr.; skip tender $1.73/hr. 1 miner, 1 timberman, 2 muckers, 1 hoistman, 1 skip tender averaging 2ft./shift.

	$ 43.68	/ft.
Insurance, social security, etc. 12%	5.24	"
Powder, fuse, detonators, lead wire	4.40	"
Timber, wedges, spikes	6.00	"
Compressor supplies and fuel	3.00	"
Steel and bits	2.25	"
Repairs	1.50	"
Hoist, electric. To be purchased	11.04	"
Hose and fittings	0.60	"
Ore car	0.65	"
Diesel generator supplies and fuel	3.00	"
Cable and bucket	1.25	"
Pipe and fittings	0.45	"
Tools	0.50	"
Guides for bucket	0.25	"
Accounting	0.75	"
Engineer and supervisor $450/month for 2½ mo.	11.25	"
Rental		
Compressor $290/mo.	7.25	"
Jackhammer $40.50/mo.	1.01	"
Diesel Generator to be furnished by operator $\frac{2400}{60}$ = $40/mo	1.00	"
Total/ft.	$104.98	
100 ft. shaft. Total Cost	$10,498.00	

Crosscut and drift on vein: total 150 feet;
5 day week, advance 3.5 feet per day =
43 days = 9 weeks = 2¼ months. Same wage
scale as for sinking shaft.

1 miner, 2 muckers, 1 hoistman, 1 skip tender averaging 3.5 feet per shift	$ 21.01	/ft.
Insurance, social security, etc. 12%	2.32	"
Powder, fuse, detonators	3.25	"
Timber	3.00	"
Compressor supplies and fuel	3.00	"
Steel and bits	2.25	"
Repairs	1.50	"
Hoist	11.04	"
Hose and fittings	0.45	"
Diesel generator supplies and fuel	3.00	"
Ore car	0.75	"
Pipe and fittings	0.45	"
Track, ties, fishplates, spikes	0.50	"
Tools	0.30	"
Accounting	0.50	"
Supervising engineer $450/mo.	6.75	"
Rental		
Compressor $290/mo.	4.40	"
Drifter, column and arm $55.00/mo.	0.83	"
Diesel generator. To be furnished by operator	0.60	"
Total cost/ft.	$ 65.90	
Drifting and Crosscut 150 feet. Total	$ 9,885.00	

Hoist house and head frame

Hoist house

Supplies	$ 125.00
Labor. 2 carpenters, 4 days @ $2.00/hr.	64.00
Insurance, social security, etc. 12%	8.68
	$ 197.68

Head frame

Supplies	$ 200.00
Labor. 2 carpenters, 4 days @ $2.00/hr.	64.00
Insurance, social security, etc. 12%	8.68
	$ 272.68

Total cost for shaft, crosscut and drift

Sinking shaft	$10,498.00
Drift and crosscut	9,885.00
Hoist house and head frame	470.36
Assays	300.00
Pick up truck. To be supplied by operator. 5 months @ $110.00/mo.	550.00
Fuel, supplies and repairs for pick up	200.00
Contingencies. 10% of total	2,160.00
Total Cost	$24,063.36

2 910.00

26 973.36

5 948 82

3 245 1 88

2. Core drilling by contract

839 ft. of core drilling @ $4.00/ft. by contract	$ 3,356.00
3 drill sites - preparing sites	240.00
Pick up truck. To be supplied by operator. 1¼ months @ $110.00 per month	137.50
Supplies, fuel and repairs for truck	50.00
1 laborer 30 days @ $1.73/hr.	415.20
1 engineer $450.00 per month 1¼ months	562.50
Insurance, social security, etc. 12%	117.32
Core boxes 20 @ $5.00 each	100.00
Assaying	500.00
Total	$ 5,478.52

839 ft. of core drilling @ $5,478.52 = $ 6.53 per ft.

3. Trenching by bulldozer

Rental of bulldozer with operator and supplies 120 hours @ $18.00/hr.	$ 2,160.00
Supervisor, sampler 3 weeks, 5 days per week, @ $2.50 per hour	300.00
Assaying, surveying	450.00
Total	$ 2,910.00

120 hours @ $2,910.00 = $24.25 per hour

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

APPLICATION FOR AID IN AN
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EXPLORATION COSTS

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	$ 43.68/ft.
Insurance, social security, etc. 12%	5.24 "
Powder, fuse, detonators, lead wire	4.40 "
Timber, wedges, spikes	6.00 "
Compressor supplies and fuel	3.00 "
Steel and bits	2.25 "
Repairs	1.50 "
Hoist, electric. To be purchased	11.04 "
Hose and fittings	0.60 "
Ore car	0.65 "
Diesel generator supplies and fuel	3.00 "
Cable and bucket	1.25 "
Pipe and fittings	0.45 "
Tools	0.50 "
Guides for bucket	0.25 "
Accounting	0.75 "
Engineer and supervisor $450/month for 2½ mo.	11.25 "
Rental	
Compressor $290/mo.	7.25 "
Jackhammer $40.50/mo.	1.01 "
Diesel Generator to be furnished by operator $\frac{2400}{60}$ = $40/mo	1.00 "
Total/ft.	$104.98
100 ft. shaft. Total Cost	$10,498.00

Crosscut and drift on vein: total 150 feet;
5 day week, advance 3.5 feet per day =
43 days = 9 weeks = 2¼ months. Same wage
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Track, ties, fishplates, spikes	0.50	"
Tools	0.30	"
Accounting	0.50	"
Supervising engineer $450/mo.	6.75	"
Rental		
Compressor $290/mo.	4.40	"
Drifter, column and arm $55.00/mo.	0.83	"
Diesel generator. To be furnished by operator	0.60	"
Total cost/ft.	$ 65.90	
Drifting and Crosscut 150 feet. Total	$ 9,885.00	

Hoist house and head frame

Hoist house

Supplies	$ 125.00
Labor. 2 carpenters, 4 days @ $2.00/hr.	64.00
Insurance, social security, etc. 12%	8.68
	$ 197.68

Head frame

Supplies	$ 200.00
Labor. 2 carpenters, 4 days @ $2.00/hr.	64.00
Insurance, social security, etc. 12%	8.68
	$ 272.68

Total cost for shaft, crosscut and drift

Sinking shaft	$10,498.00
Drift and crosscut	9,885.00
Hoist house and head frame	470.36
Assays	300.00
Pick up truck. To be supplied by operator. 5 months @ $110.00/mo.	550.00
Fuel, supplies and repairs for pick up	200.00
Contingencies. 10% of total	2,160.00
Total Cost	$24,063.36

2. Core drilling by contract

839 ft. of core drilling @ $4.00/ft. by contract	$ 3,356.00
3 drill sites - preparing sites	240.00
Pick up truck. To be supplied by operator. 1¼ months @ $110.00 per month	137.50
Supplies, fuel and repairs for truck	50.00
1 laborer 30 days @ $1.73/hr.	415.20
1 engineer $450.00 per month 1¼ months	562.50
Insurance, social security, etc. 12%	117.32
Core boxes 20 @ $5.00 each	100.00
Assaying	500.00
Total	$ 5,478.52

839 ft. of core drilling @ $5,478.52 = $ 6.53 per ft.

3. Trenching by bulldozer

Rental of bulldozer with operator and supplies 120 hours @ $18.00/hr.	$ 2,160.00
Supervisor, sampler 3 weeks, 5 days per week, @ $2.50 per hour	300.00
Assaying, surveying	450.00
Total	$ 2,910.00

120 hours @ $2,910.00 = $24.25 per hour

GEOLOGIC REPORT AND RECOMMENDATIONS ON THE SUNSET GROUP OF MANGANESE MINING CLAIMS SENECA MINING DISTRICT, PLUMAS COUNTY, CALIFORNIA

UNITED ENGINEERS
ROBERT C. HORTON, GEOLOGIST
Room 3 - 252 West First Street
Reno, Nevada

October 3, 1952

TABLE OF CONTENTS

Page

INTRODUCTION. 1

Location of Area. 1

Purpose and Method of Investigation . . . 2

RECOMMENDATIONS 3

GEOGRAPHY 7

STRATIGRAPHY AND PETROGRAPHY. 9

Regional. 9

Local 9

GEOLOGIC REPORT AND RECOMMENDATIONS ON THE SUNSET GROUP OF MANGANESE MINING CLAIMS-- SENECA MINING DISTRICT, PLUMAS COUNTY, CALIFORNIA

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The property investigated consists of eleven unpatented mining claims: Sunset, Sunset #1, Sunset #2, Sunset #3, Sunset #4, Sunset #5, Sunset #6, Sunset #7, Sunset #8, Sunset Extension, and Sunset Extension #1. The claims are located in Sections 2, 3, 11, 12, Township 8 North, Range 26 East, and Section 34, Township 9 North, Range 26 East, Mount Diablo Base and Meridian, in the Seneca mining district, Plumas County, California. The claims are readily accessible by a U. S. Forest Service road which is well maintained. Supplies and lodging are available in Greenville, California, 14 miles from the property. Ore may be shipped via the Western Pacific Railroad which has a spur track and loading platform at Canyon Dam, 5 miles from the mine.

Purpose and method of investigation:

The purpose of this investigation was to determine the advisibility of conducting an exploration program in order to determine the merit of the property. Sampling programs conducted by the U. S. Bureau of Mines and various individuals previously indicated the presence

of large bodies of low-grade manganese ore. The writer regrets that the results of most of these tests are not immediately available. Because of the high manganese content previously demanded by purchasers of manganese ores this property could not be mined economically. Now that lower-grade manganese ores are being accepted a re-evaluation of the property was deemed desirable.

The claims were surveyed by transit and stadia in order to correct the original compass and pace survey. New corners and location monuments were erected on the surveyed claims. The Sunset #4 and Sunset #5 mining claims were not surveyed. The open pits were mapped with plane table and stadia rod.

Recommendations

Three main ore bodies are exposed on the property by the open pits on the Sunset #2, Sunset #3 and Sunset Extension claims. Of these, the ore bodies on the Sunset #2 and Sunset Extension claims are the most promising. The Utah Construction Company shipped ore from the pit on the Sunset #2 claim during the last war. The writer does not have a record of these shipments, but has been informed by the U. S. Bureau of Mines that the shipments assayed from 15% to 27% Mn. The following samples were taken from this pit by the U. S. Bureau of Mines and by the operators:

	Mn	Fe	P	S	SiO_2	Zn
1.	24.40	5.85	0.041	0.127	41.74	0.1
2.	24.7	3.10	0.072	0.022	43.14	—
3.	19.24	22.45	0.14	—	23.22	—
4.	26.83	26.45	0.16	—	10.35	—

After washing sample #1 assayed as follows:

Mn	Fe	P	S	SiO_2	Zn
47.9	7.55	0.316	0.023	3.20	0.1
47.2	5.50	0.273	0.030	5.70	0.1

The ore from this pit thus appears to be amenable to washing. The rise in the manganese content is due largely to the removal of the chert during the washing process,

thus lowering the silica content and increasing the manganese content.

It is recommended that a shaft be sunk 100 feet in the ore body, or immediately to the east of the vein. 150 to 200 feet of drift should be driven from the bottom of the shaft north-west along the vein. The ore is too soft and friable to be accurately tested by core drilling. This proposed shaft and drift is shown on the accompanying map.

The ore body on the Sunset Extension claim can best be explored by a crosscut. This crosscut is also shown on the accompanying map. The following samples were taken from the pit on the Sunset Extension claim by the U. S. Bureau of Mines and others:

Mn	Fe	SiO_2	P	S
14.87	47.65	1.18	0.28	
16.0	23.50	51.05	0.035	0.003
19.0	19.75	33.36	0.155	0.002
11.4	9.65	61.31	0.013	0.035
16.1	9.40	54.75	0.010	0.057

No washing tests have as yet been made on this ore. The ore closely resembles that found in the previously mentioned ore body and will probably give comparable results when washed.

The ore in the pit on the Sunset Extension claim is not so soft or fractured as to preclude testing by core drilling. It is suggested that a sufficient number of holes be drilled to satisfactorily test the ore body before the crosscut is started.

The entire length of the vein should be tested by trenching at regular intervals. Random samples cut along the vein indicate the possible presence of other ore bodies. Any promising areas uncovered by trenching should be further tested by diamond drilling.

Although it is small, the ore body on the Sunset #3 claim is worthy of additional exploration work. The following samples were cut in the pit on this claim:

Mn	Fe	SiO_2	P
39.00	7.00	15.84	0.06
55.02	1.69	4.55	0.05
24.6	1.55	3.98	0.071
12.2	7.65	59.91	0.063

The ore body on this claim contains many quartz veinlets. The silica is so intimately mixed with the manganese that washing would probably not be effective. However, the ore body can easily be tested by core drilling because of its character, i. e., dense and homogenous in character.

The following stages of exploration are recommended:

Stage 1. Sinking a 100 ft. shaft and drifting 150 to 200 ft. on the Sunset #2 ore body.

Stage 2. Core drilling the ore body on the Sunset Extension claim. If the core drilling results warrant it, a crosscut should then be driven to intersect the ore body at depth.

Stage 3. Trenching of the vein by a bulldozer and core drilling of the favorable areas uncovered.

Stage 4. Core drilling the ore body on the Sunset #3 claim.

UNITED ENGINEERS
ROBERT C. HORTON, GEOLOGIST
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Geography

The mine is located in the Sierra Nevada Mountains. The area is one of rugged relief. There are, however, few outcrops or talus slopes. The soil covering varies from a few inches to over six feet in thickness. Heavy stands of red fir and spruce cover the area. Manzanita and gooseberry bushes grow in abundance.

The claims are located upon a ridge. This ridge is probably controlled by the outcrops along the vein. The only outcrops are those which consist predominantly of quartz. Other portions of the vein, in which quartz is not abundant, are covered by soil.

The Sunset and Sunset Extension claims are located on a steep slope on the northern part of the ridge. The surface rocks on these claims are relatively fresh, as erosion has removed most of the weathering products. Oxidation of the manganese, however, extends to a depth of at least fifteen feet and quite probably to greater depths. The rocks exposed on the other claims are weathered and decomposed. The chert exposed in the bottom of the pit on the Sunset #2 claim is soft and crumbles easily. Oxidation of the manganese undoubtedly extends to greater depths than on the aforementioned claims.

The mine is located at an average elevation of 6000 feet. Heavy snowfalls, four to ten feet in depth are common during the winter months. Moderate rainfall occurs during the spring, but the summer and fall months are relatively dry.

11

Stratigraphy and Petrography

Regional:

The manganese deposits of the Sunset Mine occur in the Calaveras group, which consists of undivided Carboniferous marine meta-sediments, gray to brown sandstones, dark gray clay-slates, quartzite, limestone and conglomerate. Bulletin No. 125 of the State of California, Division of Mines, describes the quartzite as actually being meta-chert, and further states that the manganese deposits in the Calaveras group are always associated either with unmistakable red radiolarian cherts or meta-chert. This appears to be true of all the manganese deposits in the Calaveras group in Plumas County. In most cases these cherty rocks are considered to be siliceous replacements of limestone.

Facts!

Local:

The manganese deposits of the Sunset Mine occur in a vein and are definitely epigenetic. Both sides of the vein have been silicified to form red chert or jasper. The vein strikes N. 41° W. The strike of the vein is remarkably uniform throughout the length of the claim. The dip of the vein is nearly vertical. The wall rocks, beyond the silicified zone, are slates.

Laharum! This are oxidized tuffaceous bedded chert deposit

The vein varies in thickness from 10 feet to 200 feet. The outcrops exposed on the Sunset Extension and Sunset #3 claims contain many quartz veinlets which cut the bodies of manganese. There are no quartz veinlets exposed in the pit on the Sunset #2 claim. The manganese ore body in this pit is consistent in size and quality. The manganese minerals are psilomelane, braunite, rhodonite and bementite. The gangue is weathered chert.

Oxides are derived from these silicates by weathering, and they do not have much upon the original silicate primary ore.

The ore body has been exposed to a depth of 20 feet. Oxidation is nearly complete at this depth. The ore body on the Sunset Extension claim has been exposed to a depth of 18 feet, and oxidation of the manganese minerals is also complete at this depth.

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TABLE OF CONTENTS

Page

INTRODUCTION. 1

Location of Area. 1

Purpose and Method of Investigation . . . 2

RECOMMENDATIONS 3

GEOGRAPHY 7

STRATIGRAPHY AND PETROGRAPHY. 9

Regional. 9

Local 9

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MINING LEASE AND OPTION TO PURCHASE

THIS MINING LEASE AND OPTION AGREEMENT made this 19th day of July, 1952 by and between W. J. McMillan and Alice M. McMillan, his wife, the parties of the first part, hereinafter called lessors, and Irvin Kantor, party of the second part, hereinafter called the lessee.

W I T N E S S E T H:

That for and in consideration of the sum of One Dollar ($1.00) lawful money of the United States of America paid by the Lessee to the Lessors, the receipt of which is hereby acknowledged, and the payment of the royalties hereinafter reserved to be paid by the Lessee to the Lessors, and the performance of the covenants hereinafter set forth to be kept and performed by the Lessee, the Lessors do hereby lease and let and the Lessee hereby leases from the Lessors the following described property situate in the County of Plumas, State of California, and more particularly described as follows, to wit:

The Sunset Group of Mining Claims, situated in Seneca Mining District, Plumas County, California consisting of the Sunset, Sunset 1, 2, 3, 4 and 5, situated about 5 miles Southeast of Almanor Station of the Western Pacific Railroad, Plumas County, California with all the appurtenances thereto.
These claims are recorded in the office of the County Recorder at Quincy, California as follows:

Claim	Volume	Page
Sunset	20	326
Sunset No. 1	19	8
Sunset No. 2	19	9
Sunset No. 3	19	9
Sunset No. 4	23	184
Sunset No. 5		

The term of this lease is for twenty (20) years, beginning on the 19th day of July, 1952, and ending on the 19th day of July, 1972, unless sooner terminated, canceled or forfeited in accordance with the terms thereof.

The Lessee is hereby expressly granted the right to enter upon said premises and to mine and explore the same and to take, remove, process, concentrate and dispose of any of the manganese and other ores and minerals on or beneath the surface of said properties so long as this lease shall continue to remain in full force and effect: said mining operations to be conducted by the Lessee may be either by underground or open pit or caving methods, or any other methods selected by the Lessee as the most practical, expedient and economical methods to be pursued in the extraction, removal, processing, concentrating and/or recovery of the manganese and other ores and minerals from said lands.

The Lessee shall begin work on said premises not later than September 15, 1952 in preparation for actual mining on the premises herein leased.

Upon the commencement of the term of this lease, the Lessee shall enter upon and take possession of the said demised premises and shall be entitled to and shall have the full and unrestricted use and possession thereof and the full right to prospect, explore, develop, sink shafts, drive any and all types of mine workings and extract ores and dress, treat, mill or export all such ores and all minerals and metals contained therein.

Lessee shall work the whole or said demised premises in a proper, skillful and minerlike manner with approved economical mining practices so as to remove from said premises

the greatest amount of ore with due regard to the safety, preservation and development of said premises as workable mining claims.

All operations of Lessee shall be conducted in compliance with the laws of the United States and the State of California and in compliance with all rules and regulations of governmental agencies applicable thereto.

The Lessors, or their duly appointed agent or representative, shall have the privilege of entering into and inspecting said property, and all buildings, improvements and workings for the purpose of ascertaining the manner in which the Lessee is carrying on said operations.

The Lessee agrees to pay to the Lessors a royalty of ten per cent (10%) of the gross selling price of all ores and/or concentrates 40% Mn and over removed and sold from the demised premises; and five per cent (5%) of the gross selling price of all ores and/or concentrates below 40% Mn removed and sold from the demised premises.

The Lessee further agrees to pay to the Lessors the sum of One Thousand Dollars ($1,000) on or before August 1, 1952.

From and after September 1st, 1952, Lessee agrees to mine and sell not less than six thousand (6,000) tons of manganese ore each and every fiscal year during the term of this agreement, such fiscal year commencing with the shipment of the first carload on or about November 15, 1952.

s/I. J. Kantor
by A.W.H.
A.M. McM.

It is agreed by and between the parties hereto that the Lessee shall not be required to operate said mining property for the period of four (4) consecutive months during each fiscal year by reason of unfavorable weather conditions, but in the event that weather conditions are

such that mining operations may be carried on, Lessee agrees to operate said mining property during the period of the favorable weather.

On or before the 10th day of each month during the life of this lease, Lessee shall mail to Lessors at the address hereinafter stated (or at such other address as Lessors may substitute therefor in writing delivered to Lessee) a written report showing the quantity of all ores, metals and minerals shipped from said property during the then preceding calendar month, the quantity in the absence of known shipping weights, to be estimated with reasonable accuracy by Lessee.

Lessee shall conduct its operations hereunder in accordance with customary mining practice and shall commit no waste or damage except such incidental to the customary conduct of mining, milling and concentration operations.

Lessors shall have the right, in person or by duly authorized agent at all reasonable times during the life of this lease, to inspect all mine workings and buildings erected by Lessee. Lessors shall also have the right to enter said property at all times for the purpose of posting notices of non-responsibility provided in Section 1192 of the Code of Civil Procedure of the State of California. Lessors shall not be responsible for any work done by or for Lessee upon said property or for any materials furnished Lessee for use thereon. Lessee shall pay all bills, charges and expenses incurred by it in connection with operations hereunder and shall protect and hold harmless the said property from all claims and liens of every nature arising from any act of Lessee.

The parties further mutually agree that any claims located by the parties or any of them, in the area of the

above claims or contiguous to the above claims, or on any extension or trend of the lode or lenses on the above demised property will be included in the property herewith leased and demised.

Lessee shall, at its own expense, procure and carry compensation insurance protecting its employees under the California Workman's Compensation, Insurance and Safety Act as to all its operations upon said property.

The Lessee agrees to pay all royalties due to the Lessors within thirty (30) days from receipt of settlement for all ores, metals or concentrates sold by the Lessee. Such payment by the Lessee to be to W. J. McMillan, and all such payments shall be accompanied with copies of the sales invoices or settlement sheets.

In the event of a claimed breach of this lease or of default in performance hereunder, Lessors shall promptly notify Lessee in writing of the claimed breach or default and shall specify in such written notice the details of the claimed breach or default. Lessee shall have thirty (30) days after receipt of such written notice in which to remedy, or to be in good faith in the process of remedying such breach of default. If Lessee shall fail to remedy such breach or default as herein provided, Lessors shall have the right to terminate this lease, and thereupon, all rights of the parties hereto shall terminate, excepting the right of Lessors to be paid any unpaid royalties then due from Lessee to Lessors and of the Lessee to move equipment as provided herein.

For the purpose of notices and communications from one party to another hereunder the address of Lessors (subject to written notice of change of address) shall be as follows:

W. J. McMillan, 427 LaRue Avenue, Reno, Nevada.
And the address of Lessee (subject to written notice of change of address shall be as follows:

Irvin Kantor, 200 West 86th Street, New York City, N. Y.

All notices hereunder shall be given either by personal delivery or by mailing by United States Mail, registered, return receipt requested, postage prepaid, addressed to the parties at the addresses set forth above.

In the event that the operation of said property shall cease to be profitably or satisfactory to Lessee, he shall have the right to terminate this lease by giving written notice to Lessors of his desire to terminate the lease and thereupon all rights and obligations of all parties hereto shall cease, excepting only that Lessee shall pay any royalties then remaining unpaid, if there shall be any so unpaid, and Lessee may remove equipment as hereinafter provided.

Time is of the essence of this lease.

Lessee shall have the right to remove all of his machinery, equipment, tools, and said supplies from said property within ninety (90) days after favorable weather prevails, after the expiration or sooner termination of this lease if said lease shall be terminated. All buildings that the Lessee may place on said premises shall at such termination become the property of the Lessors and the Lessors shall have the right to the use of any roads that the Lessee may build to or on said premises.

Lessee shall have the right to assign his interest in this lease without obtaining the written permission of the Lessors and this lease shall expressly inure to the benefit of and shall bind the successors, heirs, assigns, and administrators of the parties hereto.

The Lessee shall not be bound by any unavoidable delays and contingencies such as strikes, lock-outs, acts of God, governmental rulings, act of war and/or declaration of war, or any other contingency beyond the control of the Lessee.

IN WITNESS WHEREOF, the parties hereto have executed this lease this day and year hereinabove written.

W J McMillan

Alice M McMillan

LESSORS

LESSEE

OPTION TO PURCHASE

THIS AGREEMENT made this 19th day of July, 1952, by and between W. J. McMILLAN and ALICE M. McMILLAN, his wife, parties of the first part, and IRVIN KANTOR, party of the second part,

W I T N E S S E T H

That the first parties for and in consideration of the sum of One Dollar ($1.00) to them in hand paid have agreed and do hereby agree to sell and convey unto the second party the above described mining property, being the same property embraced in the foregoing lease which is simultaneously executed herewith, the same to be conveyed by good and sufficient deed.

Upon condition, however, that the second party shall pay to first parties for said hereinabove described mining property the sum of Two Hundred Fifty Thousand Dollars ($250,000.00) on or before the 19th day of July, 1972, and any and all royalties paid as provided in the foregoing lease and any other payments made by second party to first parties as provided in the foregoing lease shall be considered as a partial payment on the

purchase price of said premises in case said second party, or his assigns, avails himself of the option to purchase herein given; otherwise such royalty and other payments so made shall remain the property of first parties as rental for the use and occupancy of said premises.

IN WITNESS WHEREOF, the parties hereto have executed this option to purchase the day and year hereinabove written.

W. J. McMillan

Alice M. McMillan

Parties of the First Part

Irvin Kantor

Party of the Second Part

STATE OF NEVADA,)
) ss.
COUNTY OF WASHOE.)

On this 26th day of August, 1952, before me, the undersigned, a Notary Public, personally appeared W. J. McMILLAN and ALICE M. McMILLAN, his wife, known to me to be the persons described in and who executed the above and foregoing instrument and they acknowledged to me that they executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year herein first above written.

SEAL

S/D. B. STEWART
Notary Public in and for the County of Washoe, State of Nevada
D. B. Stewart
My Commission Expires May 26, 1955

STATE OF NEVADA,)
) ss.
COUNTY OF WASHOE.)

On this 26th day of August, 1952, before me, the undersigned, a Notary Public, personally appeared IRVIN KANTOR, known to me to be the person described in and who executed the above and foregoing instrument and he acknowledged to me that he executed the same freely and voluntarily and for the uses and therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year herein first above written.

SEAL

S/D. B. Stewart
Notary Public in and for the County of Washoe, State of Nevada

1 cy of map enclosed
1/7/53

FILE COPY
SURNAME:

Rutledge
Martin
Carr
Gilbert
Kinkel
Hodges
Rutledge
Johnson

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

JUN 25 1953

Mr. Albert Hilliard
Sunset Mining Corporation
Byington Building
Reno, Nevada

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

Dear Mr. Hilliard:

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced 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 low-grade manganese mineralization at the Sunset Mine, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

6-25-53

FARutledge/esf (6/24/53)
cc: Docket
Code 400
Admr. Read. File
FT Reg. III
Operating Committee
Martha Carr, GS
Mr. Gealy, USBM

FILE COPY
SURNAME:

Rutledge
Martin
Selfridge.

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

JAN 30 1953

Mr. M. 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 (GLB)

Chairman, Operating Committee

Enclosures

FARutledge/ls
1/30/53

P.N. 1-30-53

Approved:

J. H. Hedges (GLB)

Member, Bureau of Mines

A. R. Kinkel, Jr. (GLB)

Member, Geological Survey

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

FILE COPY
SURNAME:

Rutledge
Selfridge
Mulchay

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

JAN 16 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 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 (GHB)

Chairman, Operating Committee

Enclosures

APPROVED:

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

T. P. Thayer (GHB)
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

J.N.
1-16-53

FILE COPY
SURNAME:

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

Rutledge
Kuhlen
Thayer
Hodges

JAN 16 1953

Mr. Albert Hilliard
Sunset Mining Corporation
Byington Building
Reno, Nevada

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

Dear Mr. Hilliard:

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. H. 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 (for)

Administrator

D.H. 1-16-53

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

Mr. Albert Hilliard
Sunset Mining Corporation
Byington Building
Reno, Nevada

January 7, 1953

Subject: DMEA-2837
Re: Exploration Assistance
Sunset Mine

My dear Mr. Hilliard:

The receipt of your application dated December 30, 1952 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2837 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-2837 in any future correspondence relating to your application.

Sincerely yours,

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

25451

MF-103
(Revised April 1952)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 7 1953

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. DMEA-2837
Metal or Mineral
Date Received 1/7/53
Estimated Cost
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: _____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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)?

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

☐ 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 DECEMBER 30, 195[illegible]

SUNSET MINING CORPORATION
(Applicant)

By [signature]
President

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

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

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

ADDENDUM 1

1. Sunset Mining Corporation
c/o Albert Hilliard
Byington Building
Reno, Nevada

(b) Corporation; incorporated under the laws of the State of Nevada.

(c) Irvin Kantor--President--Hotel El Cortez, Reno, Nevada

Arnold M. Phippen--Vice President--812 N. Virginia St., Reno, Nevada

Syd B. Kantor--Secretary-Treasurer--200 W. 86th St., New York City, N. Y.

3. The property to be explored consists of eight unpatented lode mining claims, each 1500 ft. long and 600 ft. wide. See attached map for location of claims. The claims are recorded as follows in the Plumas County, California recorder's office:

Sunset.	Vol. 20	Page 326
Sunset #1	Vol. 19	Page 8
Sunset #2	Vol. 19	Page 9

Sunset #3	Vol. 19	Page 9
Sunset #4	Vol. 23	Page 184
Sunset #5	Vol. 26	Page 149
Sunset Extension	These claims were located	
Sunset Extension #1	during a recent survey of the property and are in the process of being recorded.	

(b) Sunset Mine.

(c) Lessee.

(d) Copies of the mining lease and option are included with this application.

(e) There are no liens or encumbrances on the property.

(f) Book and page numbers are included in the description of the claims.

4. (a) A limited exploration program is now in progress. The open pits on the Sunset #3 and Sunset #2 claims have been deepened so that accurate samples may be obtained. The area around the pit on Sunset #2 claim has been cleared of brush and trees. The roads have been bladed and improved. The mine workings consist of open pits and trenches on the Sunset, Sunset #2, Sunset #3 and Sunset Extension. All these pits are immediately accessible by car. The present exploration work is

4. (a) Continued

being done by the applicant.

(b) No ore is being mined at the present time, although the applicants contemplate mining and shipping ore from the Sunset #2 pit. Some ore was mined during World War II by the Utah Construction Company. Records of these shipments are not available.

No ore reserves are blocked out.

(c) See accompanying map and report.

(d) A good, unpaved road, maintained by the Forest Service and Plumas County, crosses the property. All mine workings are accessible by car on roads built and/or maintained by the applicant. All roads are in excellent condition.

Ore shipments will be hauled approximately 8 miles to Canyon Dam, Plumas County, California, where loading facilities are available on the Western Pacific Railroad.

Residences for employees are available at Canyon Dam or at Greenville, California, 19 miles from the mine. Supplies may be obtained at Greenville; Quincy, 43 miles; Susanville, 45 miles; or Reno, 125 miles.

(e) No difficulty is anticipated in securing employees. Because of the large lumber companies which operate

4. (e) Continued

in the vicinity many workers reside in this area. The applicants have always been able to hire as many men as were needed for the previously mentioned exploration work.

Materials, supplies and equipment are available from neighboring towns. Equipment salesmen have assured the applicants of reasonably prompt delivery on all heavy equipment.

No power is available at the property at the present time. Power requirements will be met by stationary power plants erected at the mine.

Water is available from a spring located approximately 2400 ft. SW of Sunset claim #2. The flow of this spring is estimated at 500 gallons per minute.

5. (a) Manganese.

(b) A claim map is included as part of this report. The location of open pits, cuts and outcrops are shown on the map. The locations of the proposed shaft, drifts and crosscut are also shown.

A geologic map is not included as making such a map would entail considerable trenching and open cut mining because of the covering of vegetation and soil. See enclosed report for proposed exploration work.

5. (c) The work will start within 10 days and be completed within 24 months. Active exploration work will be done during 7 months of each year. The heavy snow fall during the months of December, January, February, March and April makes operations during these months extremely difficult, if not impossible. The period of active exploration work will thus cover 14 months.

(d) Irvin Kantor--President

49 years of age. Born in New York City, N. Y. College education (Cornell) 1923. Married. Has had over twenty-five (25) years of experience in the building and construction industry and in the manufacture of building materials, all in executive capacity; after college he became associated with his father's and grandfather's building organization, founded in 1886, and was thoroly trained in all phases thereof including management. Has had broad substantial experience in organization planning, administrative work, economics, large-scale finance and the management and supervision of large groups of technical and skilled employees.

Arnold M. Phippen--Vice President

The general supervision of this operation will be under the direction of Arnold M. Phippen, mining engineer and head of the field operation for the Sunset Mining Corporation (manganese). Formerly he was with the Dixie Manganese Mining Corporation of Tennessee.

MINING LEASE AND OPTION TO PURCHASE

THIS MINING LEASE AND OPTION AGREEMENT made this 19th day of July, 1952 by and between W. J. McMillan and Alice M. McMillan, his wife, the parties of the first part, hereinafter called lessors, and Irvin Kantor, party of the second part, hereinafter called the lessee.

W I T N E S S E T H:

That for and in consideration of the sum of One Dollar ($1.00) lawful money of the United States of America paid by the Lessee to the Lessors, the receipt of which is hereby acknowledged, and the payment of the royalties hereinafter reserved to be paid by the Lessee to the Lessors, and the performance of the covenants hereinafter set forth to be kept and performed by the Lessee, the Lessors do hereby lease and let and the Lessee hereby leases from the Lessors the following described property situate in the County of Plumas, State of California, and more particularly described as follows, to wit:

The Sunset Group of Mining Claims, situated in Seneca Mining District, Plumas County, California consisting of the Sunset, Sunset 1, 2, 3, 4 and 5, situated about 5 miles Southeast of Almanor Station of the Western Pacific Railroad, Plumas County, California with all the appurtenances thereto.
These claims are recorded in the office of the County Recorder at Quincy, California as follows:

Claim	Volume	Page
Sunset	20	326
Sunset No. 1	19	8
Sunset No. 2	19	9
Sunset No. 3	19	9
Sunset No. 4	23	184
Sunset No. 5		

The term of this lease is for twenty (20) years, beginning on the 19th day of July, 1952, and ending on the 19th day of July, 1972, unless sooner terminated, canceled or forfeited in accordance with the terms thereof.

The Lessee is hereby expressly granted the right to enter upon said premises and to mine and explore the same and to take, remove, process, concentrate and dispose of any of the manganese and other ores and minerals on or beneath the surface of said properties so long as this lease shall continue to remain in full force and effect: said mining operations to be conducted by the Lessee may be either by underground or open pit or caving methods, or any other methods selected by the Lessee as the most practical, expedient and economical methods to be pursued in the extraction, removal, processing, concentrating and/or recovery of the manganese and other ores and minerals from said lands.

The Lessee shall begin work on said premises not later than September 15, 1952 in preparation for actual mining on the premises herein leased.

Upon the commencement of the term of this lease, the Lessee shall enter upon and take possession of the said demised premises and shall be entitled to and shall have the full and unrestricted use and possession thereof and the full right to prospect, explore, develop, sink shafts, drive any and all types of mine workings and extract ores and dress, treat, mill or export all such ores and all minerals and metals contained therein.

Lessee shall work the whole or said demised premises in a proper, skillful and minerlike manner with approved economical mining practices so as to remove from said premises

the greatest amount of ore with due regard to the safety, preservation and development of said premises as workable mining claims.

All operations of Lessee shall be conducted in compliance with the laws of the United States and the State of California and in compliance with all rules and regulations of governmental agencies applicable thereto.

The Lessors, or their duly appointed agent or representative, shall have the privilege of entering into and inspecting said property, and all buildings, improvements and workings for the purpose of ascertaining the manner in which the Lessee is carrying on said operations.

The Lessee agrees to pay to the Lessors a royalty of ten per cent (10%) of the gross selling price of all ores and/or concentrates 40% Mn and over removed and sold from the demised premises; and five per cent (5%) of the gross selling price of all ores and/or concentrates below 40% Mn removed and sold from the demised premises.

The Lessee further agrees to pay to the Lessors the sum of One Thousand Dollars ($1,000) on or before August 1, 1952.

From and after September 1st, 1952, Lessee agrees to mine and sell not less than six thousand (6,000) tons of manganese ore each and every fiscal year during the term of this agreement, such fiscal year commencing with the shipment of the first carload on or about November 15, 1952.

It is agreed by and between the parties hereto that the Lessee shall not be required to operate said mining property for the period of four (4) consecutive months during each fiscal year by reason of unfavorable weather conditions, but in the event that weather conditions are

A. J. Kantor
by A.M.M.
A.M. McM.

1 such that mining operations may be carried on, Lessee
2 agrees to operate said mining property during the period
3 of the favorable weather.
4 On or before the 10th day of each month during the life
5 of this lease, Lessee shall mail to Lessors at the address
6 hereinafter stated (or at such other address as Lessors may
7 substitute therefor in writing delivered to Lessee) a
8 written report showing the quantity of all ores, metals and
9 minerals shipped from said property during the then preced-
10 ing calendar month, the quantity in the absence of known
11 shipping weights, to be estimated with reasonable accuracy
12 by Lessee.
13 Lessee shall conduct its operations hereunder in accord-
14 ance with customary mining practice and shall commit no waste
15 or damage except such incidental to the customary conduct of
16 mining, milling and concentration operations.
17 Lessors shall have the right, in person or by duly author-
18 ized agent at all reasonable times during the life of this
19 lease, to inspect all mine workings and buildings erected by
20 Lessee. Lessors shall also have the right to enter said
21 property at all times for the purpose of posting notices of
22 non-responsibility provided in Section 1192 of the Code of
23 Civil Procedure of the State of California. Lessors shall
24 not be responsible for any work done by or for Lessee upon
25 said property or for any materials furnished Lessee for use
26 thereon. Lessee shall pay all bills, charges and expenses
27 incurred by it in connection with operations hereunder and
28 shall protect and hold harmless the said property from all
29 claims and liens of every nature arising from any act of
30 Lessee.
31 The parties further mutually agree that any claims
32 located by the parties or any of them, in the area of the

above claims or contiguous to the above claims, or on any extension or trend of the lode or lenses on the above demised property will be included in the property herewith leased and demised.

Lessee shall, at its own expense, procure and carry compensation insurance protecting its employees under the California Workman's Compensation, Insurance and Safety Act as to all its operations upon said property.

The Lessee agrees to pay all royalties due to the Lessors within thirty (30) days from receipt of settlement for all ores, metals or concentrates sold by the Lessee. Such payment by the Lessee to be to W. J. McMillan, and all such payments shall be accompanied with copies of the sales invoices or settlement sheets.

In the event of a claimed breach of this lease or of default in performance hereunder, Lessors shall promptly notify Lessee in writing of the claimed breach or default and shall specify in such written notice the details of the claimed breach or default. Lessee shall have thirty (30) days after receipt of such written notice in which to remedy, or to be in good faith in the process of remedying such breach of default. If Lessee shall fail to remedy such breach or default as herein provided, Lessors shall have the right to terminate this lease, and thereupon, all rights of the parties hereto shall terminate, excepting the right of Lessors to be paid any unpaid royalties then due from Lessee to Lessors and of the Lessee to move equipment as provided herein.

For the purpose of notices and communications from one party to another hereunder the address of Lessors (subject to written notice of change of address) shall be as follows:

W. J. McMillan, 427 LaRue Avenue, Reno, Nevada.
And the address of Lessee (subject to written notice of change of address shall be as follows:

Irvin Kantor, 200 West 86th Street, New York City, N. Y.

All notices hereunder shall be given either by personal delivery or by mailing by United States Mail, registered, return receipt requested, postage prepaid, addressed to the parties at the addresses set forth above.

In the event that the operation of said property shall cease to be profitably or satisfactory to Lessee, he shall have the right to terminate this lease by giving written notice to Lessors of his desire to terminate the lease and thereupon all rights and obligations of all parties hereto shall cease, excepting only that Lessee shall pay any royalties then remaining unpaid, if there shall be any so unpaid, and Lessee may remove equipment as hereinafter provided.

Time is of the essence of this lease.

Lessee shall have the right to remove all of his machinery, equipment, tools, and said supplies from said property within ninety (90) days after favorable weather prevails, after the expiration or sooner termination of this lease if said lease shall be terminated. All buildings that the Lessee may place on said premises shall at such termination become the property of the Lessors and the Lessors shall have the right to the use of any roads that the Lessee may build to or on said premises.

Lessee shall have the right to assign his interest in this lease without obtaining the written permission of the Lessors and this lease shall expressly inure to the benefit of and shall bind the successors, heirs, assigns, and administrators of the parties hereto.

The Lessee shall not be bound by any unavoidable delays and contingencies such as strikes, lock-outs, acts of God, governmental rulings, act of war and/or declaration of war, or any other contingency beyond the control of the Lessee.

IN WITNESS WHEREOF, the parties hereto have executed this lease this day and year hereinabove written.

W. J. McMillan

Alice M. McMillan

LESSORS

by [illegible]

LESSEE

OPTION TO PURCHASE

THIS AGREEMENT made this 19th day of July, 1952, by and between W. J. McMILLAN and ALICE M. McMILLAN, his wife, parties of the first part, and IRVIN KANTOR, party of the second part,

W I T N E S S E T H

That the first parties for and in consideration of the sum of One Dollar ($1.00) to them in hand paid have agreed and do hereby agree to sell and convey unto the second party the above described mining property, being the same property embraced in the foregoing lease which is simultaneously executed herewith, the same to be conveyed by good and sufficient deed.

Upon condition, however, that the second party shall pay to first parties for said hereinabove described mining property the sum of Two Hundred Fifty Thousand Dollars ($250,000.00) on or before the 19th day of July, 1972, and any and all royalties paid as provided in the foregoing lease and any other payments made by second party to first parties as provided in the foregoing lease shall be considered as a partial payment on the

purchase price of said premises in case said second party, or his assigns, avails himself of the option to purchase herein given; otherwise such royalty and other payments so made shall remain the property of first parties as rental for the use and occupancy of said premises.

IN WITNESS WHEREOF, the parties hereto have executed this option to purchase the day and year hereinabove written.

W J McMillan

Alice M McMillan

Parties of the First Part

by Kantor

Party of the Second Part

STATE OF NEVADA,)
) ss.
COUNTY OF WASHOE.)

On this 26th day of August, 1952, before me, the undersigned, a Notary Public, personally appeared W. J. McMILLAN and ALICE M. McMILLAN, his wife, known to me to be the persons described in and who executed the above and foregoing instrument and they acknowledged to me that they executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year herein first above written.

SEAL

S/D. B. STEWART
Notary Public in and for the County of Washoe, State of Nevada
D. B. Stewart
My Commission Expires May 26, 1955

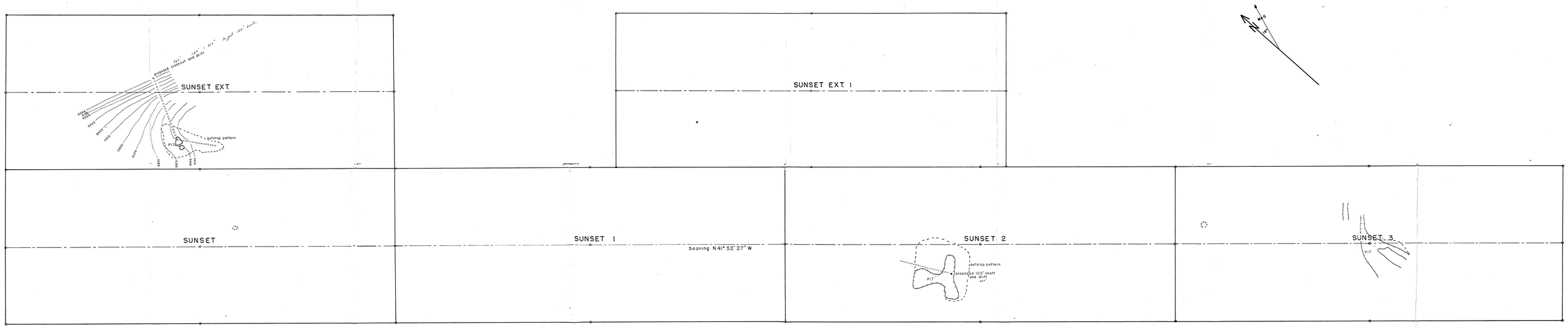
STATE OF NEVADA,)
) ss.
COUNTY OF WASHOE.)

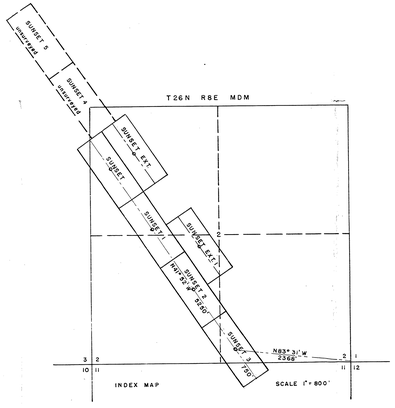
On this 26th day of August, 1952, before me, the undersigned, a Notary Public, personally appeared IRVIN KANTOR, known to me to be the person described in and who executed the above and foregoing instrument and he acknowledged to me that he executed the same freely and voluntarily and for the uses and therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year herein first above written.

SEAL

S/D. B. Stewart
Notary Public in and for the County of Washoe, State of Nevada



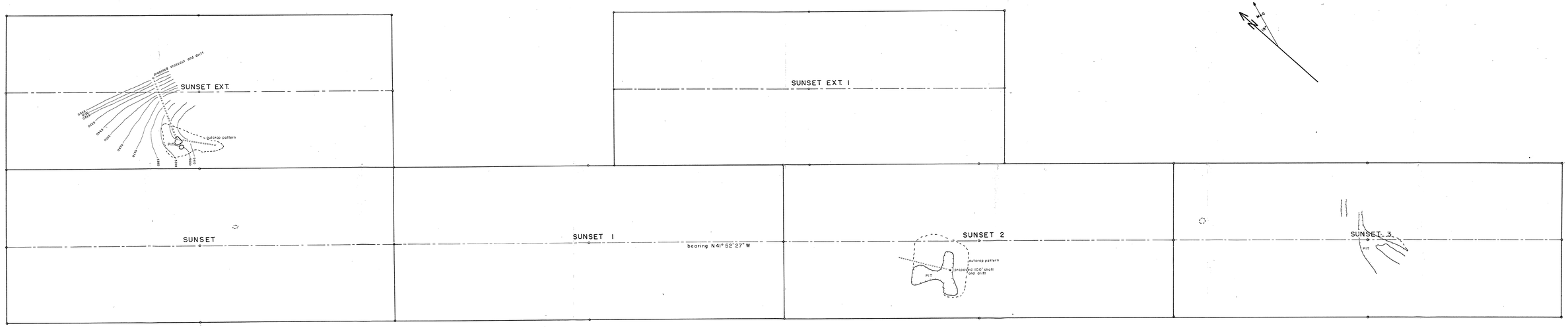


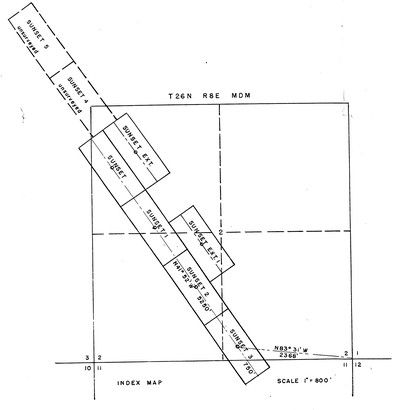
SUNSET GROUP
OF
Manganese Mining Claims

Seneca Mining District — Plumas Co. Calif.

surveyed by: Robert C. Horton — scale: 1 in. = 100 ft.

United Engineers; Reno, Nevada — date: Sept. 27, 1952





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