North Field Sec. 29, 30, 31 + 32
T8N, R6W
3 groups — { Just Associates' of 40 claims (SE 1/4 30) workings
Burnel Claims
Blue Star + Barter Apex Groups

Middle Field Sec 28 Tungsten King
T7N, R6W Tungsten Queen
Tungsten Jack groups

South Field Sec. 32 + 33
T7N, R6W
- Bonanza Lode Claims NW 1/4 of SW 1/4 32
- Beacon Claims — SW 1/4 of NE 1/4 32
- New Itinerary Claim NW 1/4 Sec 32
- White House Claims NE 1/4 Sec 32
- Mayfalla Claim NE 1/4 33.

Copy from Copy

TUcker 4428
Res. Gladstone 3336

2516 [illegible]llyridge Drive
Hollywood 28, California

Julian Boyd
Consulting Mining Engineer
510 West Sixth Street
Los Angeles 14, California

January 19, 1951

My dear Jimmy:

.....Princess Pat Mining Company

.....

.....

..... I ..... took great pains in compiling my report, and in making the tests and taking the samples, which were conclusive. If I have been rather over conservative, as I believe that the grade will be better, and that the recovery will be higher, I may have erred on the right side. The bulk sample I took was over 1,000 lbs. and that was milled under my supervision, and reduced to 50 lbs. which I took to the Assayers. The result of the assay was 0.75% WO_3, which agreed with my sample cut across 70 ft. of the face in the quarry, and with samples taken by Clute. There is higher grade ore higher up on the hill, (some high grade samples were eliminated from the calculation of the average grade, which Clute and I agreed was 0.68%).

The concentration test from the assays of the heads and tails was 85%; but in accordance with assay and weights of concentrates recovered, I cut this down to 72.6%. This was on a test of only 500 lbs. of ore running through a machine capable of concentrating 300 tons to day, so the spillings and absorbtion of some of the concentrates, affected the result more, and much more than would have occurred if we had concentrated say 100 tons, instead of 500 lbs.

I am sure that the erection of this plant will produce tungsten badly needed by the Government, and will provide Federal Income Tax to the Government of around $70,000.00 per month.

.....

REPORT ON
PRINCESS PAT MINING CORPORATION

JULIAN BOYD DECEMBER, 1950

EXHIBIT "B"

COPY

REPORT ON

TUNGSTEN PROPERTIES OF:

PRINCESS PAT MINING CORPORATION

SHADOW MOUNTAIN GROUP OF CLAIMS

SAN BERNADINO COUNTY, CALIFORNIA

BY

JULIAN BOYD
Consulting Mining Engineer

510 West Sixth St.
Los Angeles 14, California

December, 1950

TABLE OF CONTENTS

			PAGE
LETTER OF TRANSMITTAL			1
CONCLUSIONS			2
RECOMMENDATIONS			2 & 3
LOCATION			4
ACCESS			4
LEASE			4
HISTORY			4 & 5
CLIMATE			5
TOPOGRAPHY			5
GEOLOGY			5
DEVELOPMENT AND ORE RESERVES			6 & 7
REDUCTION PLANTS			7
DRY CONCENTRATION			8, 9 & 10
ASSAY CERTIFICATES			11, 12 & 13
EXHIBIT	A	A. D. Vencill, CPA	14
"	B	Lease Agreement	15
"	C	Tungstore Mines	15½
"	D	Log of Shaft	16
"	E	Flow Sheet Plant #1	17
"	F	Flow Sheet Plant #2	18

TUcker: 4428
Gladstone 3336

2516 Hollyridge Drive
Hollywood California

JULIAN BOYD
Consulting Mining Engineer
510 West Sixth Street
Los Angeles 14, California
U. S. A.

December 30, 1950

Mr. Robert F. Dore, President:
Princess Pat Mining Corporation
257 South Spring Street
Los Angeles 12, California

Dear Mr. Dore:

In accordance with your instructions, and in company with Mr. Walker S. Clute, Geologist and yourself, I visited the Shadow Mountain Group of claims, on October 5, 1950.

I made an examination of the ore deposit by daylight, and of the exposures by night, aided with the ultra-violet light.

On November 3, 1950, I again visited the property to cut a check sample across the 70 ft. face of excavation #3; and to obtain a bulk sample of 1,000 pounds or more, for a dry concentration test.

I have seen trial runs made by the D'Ore mill, and D'ore Pneu-float concentrator.

Details of the concentration test made on the latter machine, and under my supervision, are given in the text of my report.

Herewith I present you with my Report on your property, and trust that it is self-explanatory.

Yours Sincerely,

/s/ Julian Boyd
Julian Boyd

JB

C O P Y

CONCLUSIONS

This is a low grade scheelite ore deposit, which can be mined by quarrying. The ore can be beneficiated by crushing, grinding, drying and dry concentration producing primary concentrates.

The primary concentrate can be trucked to a finishing wet concentrating plant at Victorville, where an abundant supply of water is available from the Mojave River. A final concentrate can be made containing 60% WO_3 to 70% WO_3, furnishing a finished tungsten product ready for shipment by rail to the market.

There is little or no overburden on the ore deposit, and mining is cheap by quarrying, which operation will also afford a cheap method of discarding the waste rock. It will be selective mining, aided by the ultra-violet light from a quartz lamp. Barren portions of the deposit will be eliminated from the mill, and conveyed to a waste pile.

The amount of "first" ore exposed by the excavations is, in round figures, 240,000 tons of an average grade of 0.68% WO_3. An extraction of 70% or over of this grade of ore, mined, milled and concentrated to a market product will afford a good profit on the operation. See calculated estimate made by Albert D. Vencill CPA, attached to this report and marked exhibit A.

To obtain low working cost, a large operation is necessary, calling for a treatment plant of 500 tons of ore per day. Such a mill will cost about $550,000, (including required working capital of $82,000)

The capital expenditure could be redeemed with 6 months run of the plant, treating the grade of ore quoted above, vix. 0.68% WO_3, with tungsten selling for $38 per unit.

A crew of 20 men is needed for the entire operation.

RECOMMENDATIONS

The erection of a dry grinding mill at the mine with a capacity of 500 tons a day, is hereby recommended. Also the installation of a dry concentrator at the mine, and a finishing wet concentrator at Victorville.

I understand that exhaustive efforts have been made to finance this proposition, and that it has not been possible to raise the capital. It is extremely difficult to raise capital for mining in California. This has been my experience for the last five years. Therefore I recommend that you make application for a loan of $550,000 to erect your treatment plants, to the U.S. Bureau of Mines, under Sections 302 and 303 of the Defense Production Act of 1950.

RECOMMENDATIONS (Continued)

A loan of $550,000 can be amortized, and paid off in 12 months at the rate of $46,000 per month.

Part of the blance of monthly profit should be expended in diamond drilling, and other exploration to prove continuation of the deposit, and to block out additional ore reserves. Therefore I recommend such development of your properties after production is in full swing.

LOCATION

This mining property is laoated in Sections 29, 30, 31 and 32 of Township 8 North, Range 6 West, San Bernardino Base and Meridian, San Bernardino County, California. It consists of 22 lode mining claims, held by right of location, and Quit Claim Deeds, filed and recorded with the County Recorder by Just Associates, a California Limited Partnership, as owners. The claims are free and clear of any and all incumbrances.

ACCESS

Highway 395 runs north of Adelanto, San Bernardino County, and at 13 miles north of Adelanto there is a sign marked "Princess Pat Mining Corporation, Just Associates." Thence 5 miles west on a good dirt road, with a hard surface, to mill site and mine workings, just a three hour drive from Los Angeles, California.

LEASE

A lease agreement has been executed by and between Just Associates, owners, and Robert F. Dore of Los Angeles, Lessee, dated May 26, 1948, together with Extension Agreement dated September 28, 1948, and continued for a period of 20 years and as long thereafter as minerals are produced therefrom in commercial quantities by the lessee or parties in privity with him conforming to and with the provisions of said Lease. The Lease provides for no cash bonus, and the payment of 10% of all ores and minerals extracted, mining and milled from the property, as gross royalty and rent for the said mining property, less selling expense, including transportation of final concentrates and selling commisssion to third parties to obtain selling price, with further provision that the lessor has the right at his option, by giving 10 days written notice to receive his reserved royalty in kind at any particular stage of the processing at the point of production. A copy of this Lease is attached to this Report and marked Exhibit B. This Lease has been assigned to the Princess Pat Mining Company.

HISTORY

In 1938 a Company named as Tungstore Mines held a lease from Just Associates to prospect and develop these tungsten properties on Shadow Mountain. A small portable mill was erected, with a capacity of only thirty tons per day. "This mill proved to be very inefficient, both as to type of equipment and method of operation, recovering only 50% or less of the recoverable scheelite contained in the ore, as a test of the tailings pile will prove. The cost of water was high as it was hauled by tank truck from Adelanto, a distance of 18 miles. The Tungstore Mines at this time was engaged in operating three other tungsten properties, and did not have the necessary capital to carry out the proper development of the Shadow Mountain property". The above is a

HISTORY (Continued)

quotation from a letter written by Mr. W. A. Trout, President of the Tungsten Mines, dated May 5, 1950. Copy of this letter is attached to this Report, and is marked Exhibit C.

CLIMATE

The locality is on the north-east slope of the San Bernardino Range at an elevation of around 3400 ft. above sea level. It looks down over the Mojave Desert below the monntains. It is fairly hot in the summer, and cold in the winter. The snowfall is slight, and access can be made at all times to the claims, and mining and milling operations can be carried out right through the year.

TOPOGRAPHY

The particular hill on which the claims are located is known as Hill 3630, as that is the elevation of its peak. The claims are on the north-east slope of this hill, and the topogfaphy provides an ideal mining and milling situation, where flow of the ore, waste, and tailing disposal can be assisted by gravity.

GEOLOGY

The ore bearing rock is limestone overlain by schist. To the east granite appears on the surface, and dikes of grano-diorite inturde in the schist, to the south of the limestone.

The formation of the scheelite in the deposit is due to thermal solutions arising from a granite magma, probably not far below the surface. The tungstic acid in the thermal waters has reacted on the calcium of the limestone to form calcium tungstate, scheelite.

The contacts of these rocks make the region a very favorable location for the discovery of other scheelite ore bodies.

DEVELOPMENT AND ORE RESERVES

The ore has been exposed by trenches excavated by a power shovel, across and zig-zag up Hill 3630.

I understand that the Report of Mr. Walker S. Clute, Geologist, will accompany this report on the application for the loan.

Mr. Clute's report has been carefully studied by me, and I consider that his calculations and valuation of the ore reserves are conservative. I have taken the round figure of 240,000 tons as the amount of "first" ore exposed, and the average grade as 0.68% WO_3. These figures are based on Mr. Clute's measurements and maps, the assay of his samples and of my check sampling. However, in his report, Mr. Clute has given the average grade as 0.34%; but has included assays of samples which are evidently out of the tungsten area, as will be seen from a study of his assay maps. As previously stated the mining of this deposit must be selective, and guided by the ultra-violet light. Areas of rock showing no reaction to the light should be discarded in mining to a waste pile. Mr. Clute informed me that his samples were taken across the formation, and each sample weighed over 200 lbs. before being quartered down.

On November 3, 1950, I cut a check sample across the 70 ft. face of excavation #3, at right angles to the direction of the dip of the deposit. The sample was well over 200 lbs., and was quartered down to 50 lbs., which was taken to the Smith-Emery Co., for further reduction, and assaying. Assay certificate is attached to this report showing the result, namely 0.77%. This is a good check, confirming sample #26 taken by Mr. Clute (vide his report) in the same place, which assayed 0.78% WO_3.

There is no doubt that further excavation will reveal a greater tonnage than that estimated; but sufficient ore has been developed to warrant the erection of a 500 ton a day plant. The output of this plant will repay the capital invested with a good profit to the operators, in a few months, say six months. During that time 78,000 tons of ore would be mined and milled. There would still remain 162,000 tons of ore in the ore reserves. Before this was exhausted, I am strongly of the opinion that development would keep well ahead of production.

Below I give the tonnage and locations of blocks of ore developed, which I have estimated, and which can be found on Mr. Clute's maps.

It will be seen that I have made an important alteration, which is the insertion of a block of ore in Area I, called by Mr. Clute "probable ore", below excavation #3; and I have eliminated the block of ore in Area IV. This I have done for the reason that there is better evidence of the value of the probable ore, because a shaft has been sunk 58 ft. in ore below the excavation. On the other hand only one sample was taken in Area IV. Although

DEVELOPMENT AND ORE RESERVES (continued)

the shaft has been timbered, and is not now available for sampling; there is a log of this shaft made by H. B. Bessac in 1938, which I have maked exhibit D and have attached to this Report. It will be noted that nearly the whole shaft is shown to be in "#2 ore", and in 1938 "#2 ore" was the "code word" for ore containing 1% WO_3.

BLOCKS OF FIRST ORE

Location	Tonnage	Value % WO_3
Area I	123,000	0.75
" II	36,000	0.60
" III	14,000	0.65
" I (below)	67,000	0.75
Total and Average	240,000	0.68% WO_3

REDUCTION PLANTS

The estimated total cost, as stated before in this report is $550,000.00.

Attached also to this report is a flow sheet of No. 1 Plant at the mine, with profile, drawn up by Mr. John J. Jessup, C.E. Together with a flow sheet of No. 2 Plant to be built near the Mojave River at Victorville, California. This latter flow sheet is designed by Mr. Walker S. Clute, A.B.

DRY CONCENTRATION

I have seen in action the D'Ore Pneu-Float Concentrator. The dimensions of this machine are: length 87 ins., width 33 in. depth of concentrating tray $3\frac{1}{2}$ in., depth of shot bed 1 in. size of shot No. 4 buck shot to BB. The tray is operated on a Cotrell shaking tray, running with a stroke of $\frac{1}{4}$ in. at 1275 RPM, and with a feed bed of $\frac{1}{2}$ inch. The capacity of this machine is about 300 tons per day.

Data used in calculation:

Specific gravity of ore 2.634 = 164.36 lb. per cu.ft.
Time of travel of feed over deck 18 sec. = 3.33 decks per min.

$$\frac{87'' \times 33'' \times \frac{1}{2}'' \times 3.33 \times 60 \times 24 \times 164.36}{1728 \quad x \quad 2000} = 319.85 \text{ tons per day.}$$

On October 16, 1950 I witnessed a run on this concentrator on about 500 lb. of ore from the tungsten deposit described above. At this time the machine was running at 1200 RPM, with a stroke of $\frac{1}{4}$ in. I was informed that the ore used in this experimental run had already been put over the concentrator several times before, and that the feed then consisted of tailings mixed with the concentrates previously saved. On the first pass over the concentrator $7\frac{1}{2}$ lb. of concentrates were collected. The tailings were then re-run over the machine four more times, and four more batches of concentrates were recovered. This process simulated the running of five concentrators in tandem. In all $37\frac{1}{2}$ lb. of concentrates were saved.

As this run was inconclusive, I decided to return to the mine, and superintend the taking of a fresh bulk sample of about 1,200 lb., for re-runs over the concentrator.

I witnessed the crushing of this bulk sample through a D'Ore roller mill, to -15 mesh. It is noteworthy that very little sliming is done by this mill. Under a microscope with ultra-violet light, the crystals of scheelite were found to be almost unpulverized, and left in a very good condition for dry concentrating, this is confirmed by the following screen analysis:

+	4 mesh	----------			None
-	4 "	+	8 mesh		None
-	8 "	+	20 "		40.1%
-	20 "	+	40 "		40.4%
-	40 "	+	60 "		9.1%
-	60 "	+	80 "		4.3%
-	80 "	+	100 "		1.4%
-	100 "	+	200 "		3.5%
-	200 "				1.2%

Subsequently on December 22, 1950 another concentration run was made under my supervision. An amount of 550 lb. of the crushed bulk sample was put in the bin over the concentrator, and as the first run proceeded a head sample of 50 lb. was taken, and reserved for analysis. The remaining 500 lb. was put over the concentrator, concentrates were collected, and then the tails were re-passed over the machine five times, representing six machines running in tandem.

DRY CONCENTRATION (Cont)

I made the following measurements: Speed of machine 1275 RPM, length of stroke $\frac{1}{4}$ in., speed of flow over table 18 sec. Average depth of concentrating bed of ore $\frac{1}{2}$ in.

Concentrates saved in each pass were assayed separately, and the tails from the 4th, 5th and 6th passes were also assayed separately. Assays and weights were given below.

In running a 500 ton a day dry concentrating plant, the concentrates saved on the 5th and 6th tables would probably be returned to the syntron feeder of the first machine, thus saving the transportation of a greater bulk of concentrates, and lightening the load on the finishing wet concentrating plant.

SAMPLES AND ASSAYS

Description of Sample	Weight pounds	Assay % WO_3
Heads	50	.78
#1-Concentrate	12.5	6.85
#2 do	10.75	3.52
#3 do	7.75	2.80
#4 do	9.25	2.28
#5 do	11.5	2.09
#6 do	12.75	1.44
Tails after 4 th Pass		.36
Do do 5 th do		.25
Do do 6 th do		.11

By calculation from the difference of the head sample and final tails, the extraction was 85.9%

The total weight of the concentrates was $64\frac{1}{2}$ lb. Calculated from the above assays of the concentrates, the recovery was 2.09 lb. of WO_3, which is only 54% recovery.

I decided to inspect the concentrator and vicinity for spillings, and absorption of concentrates in the machine.

The machine was previously cleaned out on December 15th, and subsequently I saw a preliminary run of about 500 lb. of the bulk sample over the concentrator.

Then the experimental run was made on December 22, as mentioned and described above.

On December 29th I found some spillings below the concentrator, which were collected, and the machine was opened up, and found to contain some 20 lb. of concentrates, accumulated

DRY CONCENTRATION (Continued)

from the two runs of 500 lb. each. I noticed that even then all the crevices and pockets of the concentrator were not filled, and there was room for more accumulation of a few pounds. The 20 pounds of concentrates collected from the inside of the machine, would be a negligible factor in a day's run of the machine putting through 300 tons; but in a trial run of only 500 lb., it must be taken into account.

Therefore I had an assay made of the 22½ lb. collected, and the result was 5.95% WO_3.

Taking one half of the amount collected in the machine namely 10 lb. and 2½ lb. of spillings, of an assay value of 5.95% WO_3, I consider that .75 lb. of WO_3 thus recovered may be safely added to the recovery.

The amount of the recovery thus estimated is 72.6%, which compares favorably with the 70% recovery estimated in Mr. Vencill's report. See exhibit A.

/s/ Julian boyd
(Signed) Julian Boyd

510 W. Sixth St.
Los Angeles 14, Calif.

Dec. 30, 1950

257 South Spring St.
Los Angeles 12

Laboratory Report
SMITH-EMERY COMPANY
Chemical Engineers and Chemists
Metallurgical and Testing Engineers
920 Santee Street
Los Angeles 15

C O P Y:

C O P Y:

Laboratory
No. 328880

Date November 10, 1950

Sample Ore

Received 11/6/50

Marked "Sample #1003"

Submitted by Major Julien Boyd
510 West 6th Street
Los Angeles 14, California.

REPORT OF DETERMINATIONS.

Tungsten Trioxide (WO_3) ---------- 0.77%

Respectfully submitted,

/s/ Smith-Emery Co.
CHEMISTS AND ENGINEERS.
/s/ E. O. S. G. L. C.

PRINCESS PAT MINING CO
257 South Spring St.
Los Angeles 12

ED. EISENHAUER, JR.
Assayer--Metallurgist--Chemist

320-322 South San Pedro Street
Los Angeles 13, Calif.

Dec 30/50

Maj. Julian Boyd
Los Angeles
Calif.

Subject : Assay of Concentrates.

Marked : # 1 1- Cleanup Concentrates.

Tungstic Oxide (WO_3) 5.95 %

Respectfully submitted

/s/ Ed. Eisenhauer, Jr.
Ed.Eisenhauer, Jr.

Assayer

ED. EISENHAUER, JR.
Assayer--Metallurgist--Chemist

320-322 South San Pedro Street
Los Angeles 13, Calif.

Dec 27/50

Maj. Julian Boyd
Los Angeles
Calif.

Subject : Assays of Products from Concentration Test.

Marked :	Tungstic Oxide (WO_3)
#1-Concentrate	6.85 %
#2 do	3.52 %
#3 do	2.80 %
#4 do	2.28 %
#5 do	2.09 %
Concentrate after 6 th Pass	1.44 %
Heads - 12/22/50	.78 %
Tails after 4 th Pass	.36 %
do do 5 th do	.25 %
do do 6 th do	.11 %

Respectfully submitted

/s/ Ed. Eisenhauer, Jr.
Ed. Eisenhauer, Jr

Assayer

PRINCESS PAT MINING CORP.
257 South Spring St.
Los Angeles 12

ALBERT D. VENCILL
Certified Public Accountant
1584 W. Washington Blvd.
Los Angeles

November 22nd, 1950

Mr. Robert F. Dore, President,
Princess Pat Mining Corp.

Dear Sir:

Pursuant to your request I submit below my computation of the net result of the operation of the Princess Pat Mining Corp. based upon the following information furnished to me by you.

Body of Tungsten Ore 243,712 tons of an average assay value of .68% WO_3, all ore available for surface mining, being so called First Ore in report of Walter S. Clute dated May 20, 1949.

Minimum recovery by proposed mining and milling processes of 70% of the assay value of the ore in the form of marketable concentrate of at least 60% WO_3 content.

Market price F.O.B. mill of #38.00 per 20 lb. unit of WO_3.
Royalty payable to landowners 10% of gross sale price of product.
Direct production costs $1.26 per ton of ore handled, an increase of approximately 20% over the costs of your report of November 11, 1948.
Estimated property taxes San Bernardino County $2,500.13 per month.
Estimated depreciation expense allowable $2,310.25 per month.
Estimated monthly tonnage of ore treated 13,000 tons, average 500 tons per day for 26 days.

COMPUTATION

One ton of ore, at assay value of .68% WO_3, contains 13.60 pounds WO_3.
Recoverable WO_3, at 70%, equals 9.52 lbs. per ton of ore.
" value per lb. of WO_3, at $38.00 per unit $1.90 per lb.
" " of 13,000 tons of ore at 9.52 lbs. of WO_3 per ton at $1.90 per lb. $235,144.00

Operating Expense		
Royalty 10% of Gross Revenue	$ 23,514.40	
Direct costs Mining and Milling	16,380.00	
Depreciation	2,310.25	
Property Taxes	2,500.13	
State Corporation Franchise Tax	6,347.79	51,052.57
Profit before Federal Taxes		$ 184,091.43
Federal Income Tax at 1951 Rates and Percentage Depletion		68,139.48
Net Profit per month after Taxes		$ 115,951.95

Respectfully submitted,
/s/ Albert D. Vencill
C.P.A.

LEASE AGREEMENT

THIS AGREEMENT OF LEASE, made and entered into this 26th day of May, 1948, at Los Angeles, California, by and between JUST ASSOCIATES, a Limited Partnership formed under the laws of the State of California, and of which E. RICHARD JUST, OLIVER P. ADAMS, DOROTHY D. LEMBERGER, formerly Dorothy C. Just and OLIVER P. ADAMS, Jr., are the General Partners, and having its principal place of business at Adelanto, County of San Bernardino, California, and office at 122½ So. Vermont Ave., Loss Angeles, Calif. hereinafter referred to as the LESSOR, and ROBERT F. DORE, 1709-½ South Bonnie Brae Street, Los Angeles, California, hereinafter referred to as the LESSEE;

W I T N E S S E T H :

WHEREAS, said Lessor is the owner of certain mines, mining claims and mining locations hereinafter described and herein referred to as the "Mining Property" lying and being in San Bernardino County, State of California, and more particularly described as follows, to-wit:

All those certain lode mining claims located, being and situated in Section 30, 31, and 32, Township 8 North, Range 6 West, San Bernardino Base and Meridian, and in the County of San Bernardino, State of California, named and described as follows:

Surprise No. 2
Surprise No. 4
Surprise No. 7
Surprise No. 8, and
Surprise No. 9

All those certain lode mining claims, or portions thereof, located, being situated in Sections 30 and 31, which lie East and North of an established property line on and in said Sections, said property line being a line beginning at the Southeast corner of the Northeast Quarter of said Section 31, running thence approximately 2975 feet North 47° West to a property post set on top of a hill composed largely of Schist, thence running approximately 6230 feet North 11½° East to the Northerly boundary line of said Section 30, said lode mining claims being named and described as follows:

La Qua-Scheelite No. 1
La Qua-Scheelite No. 2
La Qua-Scheelite No. 3
La Qua-Scheelite No. 4
La Qua-Scheelite No. 5
La Qua-Scheelite No. 6
Atolaberg
North Field Q No. 3
North Field Q No. 7
North Field Q No. 8
North Field Q No. 13
Blue Star No. 3
Blue Star No. 4, and

All those certain lode mining claims or portions thereof located, being and situated in said Section 32, named and described as follows:

North Field Q No. 1
North Field Q No. 3
North Field Q No. 4
North Field Q No. 7
North Field Q No. 8, and
North Field Q No. 9.

Reference is made to Exhibit "A" attached hereto, for the proper legal description of the entries in the Official Records of the County Clerk of San Bernardino County, State of California, recording the above-mentioned mining claims.

And also all contiguous mining claims or interests therein which are discovered, located, owned or acquired by or for the Lessor or Lessee during the continuance of this Lease and situated within a radius of one-half (1/2) mile from the original discovery monument on the claim La Qua-Scheelite No. 3, but excluding the so-called "South Field" claims in any case.

WHEREAS, said Lessor desires to lease and demise said Mining Property to said Lessee, and said Lessee desires to obtain a Lease on said Mining Property for the purpose of working same and intends to work and operate said Mining Property as herein provided.

NOW, THEREFORE, IT IS AGREED:

1. Lessor does hereby lease, demise and set over to said Lessee in accordance with and subject to the terms and conditions herein expressed and at and for the rents and royalties herein specified, all of said Mining Property.

The Lessor warrants that it is the owner of the demised premises and that the same are free and clear of all liens and encumbrances created or suffered by it, other than easements and rights-of-way of record or patent upon the ground and the paramount title of the United States.

2. Lessee, in accordance with the provisions hereof and subject to the conditions herein expressed, takes same Mining Property as Lessee in accordance with this agreement, and covenants and agrees to faithfully comply with said provisions and to make and perform all the payments and things herein specified to be made and done on the part of and by the Lessee named herein.

3. The terms of this Lease shall begin on the date of this agreement and continue for a period of twenty (20) years, and as long thereafter as minerals are produced therein, thereon and therefrom, in commercial quantities by said Lessee or parties in privity with him, faithfully complying and conforming to and with the provisions of this agreement.

4. The consideration for the execution of this agreement by said Lessor is the promise of Lessee that:

(a) The Lessee will pay to Lessor as royalty and rent on, out of, and for said Mining Property, the full one-tenth (10%) part of the recovered value of all ores and minerals extracted, mined and milled from, in and on said Mining Property during the term hereof, as specified or as it may be extended, in accordance with the provisions hereof, it being intended that the royalty on recovered value is the said percentage of the gross selling price from the shipment and sales of all concentrates, ores, minerals and products extracted or taken from said Mining Property, less only selling expenses, including transportation of final concentrates, and selling commission paid to third parties, to obtain the selling price.

5. Lessee is obligated and agrees to pay all taxes levied on all property, equipment and improvements belonging to or placed by, or erected by, said Lessee on said Mining Property, and to hold said Mining Property free and clear of any adverse claims of any kind due to, occasioned by, or arising out of any act of said Lessee.

If any severance taxes are levied upon said Mining Property or the ores and minerals extracted therefrom under the provisions of this agreement, such severance taxes shall be apportioned, to-wit: one-tenth (1/10th) thereof to and payable by said Lessor; nine-tenths (9/10ths) thereof to and payable by said Lessee.

6. Lessee shall immediately be given full possession and use of the property and appurtenances upon the execution of this Lease and as soon as possible thereafter, and in no case later than one hundred twenty (120) days after date will enter upon the premises and begin installation of the necessary buildings, equipment and supplies needed and continue the installation with diligence. The Lessee shall have the right during the preliminary period of acquisition and installation of equipment to mine and remove ore in such reasonable quantities as ti deems necessary for experimental and process development purposes without obligation to account for any royalty thereon, but shall furnish Lessor with copies of all engineering reports on experiments made with such ore.

7. All gallows frames and underground timbering and car tracks placed in or upon said premises by said Lessee during the life of this agreement shall be deemed affixed thereto and become the property of said Lessor, in the event of a termination of this agreement; but all buildings, machinery, mills, engines, milling and mining tools, equipment and supplies, except as above set forth, placed in or upon said lands and premises by said Lessee during the life of this agreement shall be and remain the personal property of said Lessee subject to the terms and conditions of this agreement, and shall not be deemed affixed to said premises, and Lessee, provided he is then not in default in any of the terms or conditions upon his part to be performed as to payment of money due, shall have the right to remove the same from said premises at any time during the life of this agreement, and for one hundred twenty (120) days thereafter. Should said Lessee, however, fail to remove such machinery, mills, and other equipment from said premises within said period of one hundred and twenty (120) days from receipt of written notice from Lessor of final termination of this Lease, then such machinery, mills and other equipment shall be deemed affixed to said premises, and shall become the property of Lessor.

8. The Lessee covenants that he will, and he is hereby bound to, hold and save the Lessor free and harmless from any loss, cost, damage or expense on account of or accasioned by any act or operation of the Lessee. The said Lessee agrees to pay promptly all bills for labor and materials and to protect the demised premises from liens of mechanics and materialmen. The Lessee shall at all times during the life of this Lease carry and maintain workmen's compensation insurance covering all employees employed on or about said demised premises, or engaged in any of the work or operations conducted under the provisions of this Lease.

9. The Lessor shall have the right to post and maintain on said premises appropriate and adequate notices of non-responsibility for labor and materials furnished to Lessee, as authorized by the laws of the State of California. Such notices shall be posted so that they will not be defaced or destroyed in the normal operations of the Lessee. Lessee shall take reasonable precautions to protect such notices from defacement or destruction and in the event they shall be inadvertently defaced or destroyed, he shall promptly notify Lessor so that new notices may be posted in lieu thereof.

10. Lessee may at any time hereafter quitclaim all or any part of said Mining Property to said Lessor and thereby relieve himself of all further obligation hereunder; except for royalty accrued, provided, they shall not be in default in any of the terms and conditions hereof as to payment of royalty.

11. Nothing herein contained shall be construed to prohibit or prevent Lessee from replacing, structures, machinery or equipment that may be worn out or become obsolete, with other structures, machinery and equipment of equal or greater or adequate size or capacity or equal or better quality, and exercise the right to dispose of such replace structures, machinery and equipment as Lessee may see fit.

12. The rents and royalties hereinbefore described and set forth shall be payable monthly at Los Angeles, California. The 20th day of each calendar month is herein designated as "settlement day". On each settlement day, the Lessee shall render to the Lessor a true statement and account of all ores and minerals mined or removed from said Mining Property and treated by the Lessee at or in any mills owned or operated by, or under contract with, said Lessee, or in customs mills, and the results of such milling and processing; a true statement of all such ores, minerals, and products thereof shipped off, sold, and disposed of by said Lessee, showing the prices at and for which the same are so shipped, sold and disposed of; and a true statement of selling costs for sampling, freight, storage and commission; and a true computation of the royalty payable to Lessor on account thereof and under the provisions of this agreement for the next previous shipment or agreed period. Said statement shall be accompanied by a remittance from the Lessee of all royalty accruing and payable for the next previous shipment or agreed period.

13. Lessee shall proceed at once with the planning, design, procurement and installation of mining and milling equipment on the premises of a size, capacity and character sufficient to suitably treat and concentrate not less than one hundred (100) tons per day of ores and minerals containing scheelite or other minerals produced and extracted from mining properties under this lease. The Lessee may remove rough concentrate from the premises for further concentration in its own mills elsewhere or in custom mills but in such case shall preserve the identity of such concentrate until sold.

Lessor shall have the option at all times, to receive its reserved royalty in kind at any particular stage of the processing but such option must be exercised in writing by giving notice to Lessee not less than ten (10) days in advance and such royalty taken in kind will be set aside for Lessor and be at Lessor's sole risk and expense from then on.

Special treatment may at times be required and in such cases the expense of payments to thrid parties for processing to increase the quality of concentrate or to produce a special product after a lower quality but salable product has been obtained, and all costs incurred for the direct purpose of carrying finished concentrate or product in storage while delaying sale to obtain a better price, shall be considered part of selling expense to be deducted priorata before royalty is computed. Before beginning special treatment or storage the Lessee will notify Lessor so that Lessor may exercise its option forthwith to take its royalty in kind. Nothing herein shall prevent Lessee from pledging Ninety (90%) per cent of scheelite concentrate or other production as security for the repayment of cash advanced to Lessee.

14. Lessee will conduct his operations in a good and minerlike fashion so as to extract the largest quantity practicable of the ore, metals, and minerals in said mining premises, having due regard for the nature of the ore, metals, and minerals contained therein and the possibility of extracting them by methods known to the mining industry and which can be employed economically. All to the end that the maximum feasible quantities of ores and minerals shall be so developed, mined, milled, treated and disposed of, in order that the royalties payable under the provisions hereof shall be as large as possible from time to time, market conditions and available ore reserves being considered.

15. If Lessee shall fail to pay any tax or assessment levied against, or lien or claim (occasioned by Lessee's act) against said Mining Property or any part thereof which it is obligated to pay hereunder, Lessor may pay the same and clear said Mining Property of such tax, assessment, lien or claim, and in such case Lessee agrees and is hereby bound to reimburse said Lessor for its outlays, on demand, together with interest at the rate of Seven (7%) Per Cent on sums so laid out until the same are paid, together with attorney's fees as may be fixed by the court, if action at law is instituted by Lessor to enforce such payment, provided, however, that Lessor shall not pay any such tax, assessment, lien or claim if the legality or propriety thereof is denied by the Lessee and he promptly, diligently and successfully defends said Mining Property against such tax, assessment, lien or claim. If Lessor

shall fail to pay any tax, or assessment levied against, or lien or claim (occasioned by Lessor's act), against said Mining Property payable by Lessor, Lessee may pay the same and in such case shall reimburse themselves for sums so laid out, out of royalties thereafter accruing.

16. The performance of this agreement by the Lessee shall be excused so long as it is prevented by accidents, fires, strikes, riots, acts of God, action of the elements, inability to procure proper labor and supplies, war, insurrection, interference by Governmental action, rules or regulations, and other causes (other than financial inability), which are reasonably beyond the control of Lessee.

17. Should the operations of Lessee become unprofitable because of changes occurring in the economic situation such that the actual price obtainable on standard contracts from reputable buyers for current deliver of 60% grade domestic scheelite is more than 20% less than a present level of $27.50 per unit F.O.B. Los Angeles, California, as of June 1, 1948, or should the level of labor costs, or of overall production costs increase by 20% over the level existing at June 1, 1948, per U. S. Department of Labor published statistics, whether due to inflation, governmental laws and regulations, or other causes, then Lessee shall have the right at any time, or from time to time, at his option, to suspend operations on said mining lands until the said condition has been corrected, but shall continue to do any required assessment work.

18. Where suspension of milling operations and the production of marketable concentrates is not permitted or excused as hereinabove provided, and the Lessee, being in a position to produce marketable concentrates does wilfully suspend operations to the end that no concentrates are produced for a period of sixty (60) days or more, then, in that event, the Lessor shall have the option to serve written notice to the Lessee requiring the Lessee to resume operations and produce marketable concentrates within a period of thirty (30) days from the date of such notice or quitclaim said mining property to the Lessor and terminate this agreement.

19. Time and prompt and faithful fulfillment of each and all of the conditions hereof on the part of the Lessee to be performed is of the essence hereof.

20. The Lessor and its agents shall have the right at all times, at their sole risk, to enter upon and into all parts of the demised premises for the purposes of inspection or sampling, and to reasonable use of the facilities of Lessee for such purpose.

Lessee agrees to furnish Lessor for its exclusive use, a portion of said property not being used for mining, for the purpose of building offices, residential, or other purposes wanted or required by Lessor for itself, agents or employees, for such time that such use by Lessor shall not interfere in any way with the operations conducted by Lessee and such entry and building shall be at Lessor's sole risk and expense.

21. Lessor reserves and shall have the right to go on said demised premises at any time for the purpose of examining them and ascertaining the extent and character of the work done therein. Lessor shall also have the right to enter upon and examine each and every mill and treatment plant or warehouse, or storage plant, or shipping plant,

or equipment used or operated by Lessee in connection with the handling or treatment of any ores or minerals or other products, mined or extracted or removed from said demised premises. Lessee shall furnish to Lessor true and complete copies of any assay maps, and other maps made by Lessee in the course of his operations; also of monthly reports showing ore mined, milled, removed and sold. Lessor shall also have the right to examine at any time, and from time to time during business hours, the books and accounts of said Lessee so far as they cover or refer to the ores and minerals mined, milled, removed and sold from the Mining Lands and the proceeds received therefor.

22. Lessee shall furnish to said Lessor a copy of reports showing the location, extend and character of the development and mining work done by Lessee in and on said Mining Property, showing the location, extent and character of their mine workings, both surface and underground, the Lessor having and reserving the right at its own risk and expense to make whatever measurements or surveys it may choose for the purpose of verifying any or all of such maps and reports. Lessee shall also furnish Lessor a copy of all engineering reports, geological maps, photographs, survey maps and such other pertinent data as may be prepared by Lessee from time to time.

23. Should Lessee be found in default in the performance of the obligations assumed herein by him by arbitration as provided herein and shall fail to cure such default within thirty (30) days after written notice from the Lessor so to do, then the Lessor shall have the right at its option to terminate this agreement with respect to the demised premises, and upon such termination the Lessee shall assign and quitclaim to Lessor all of his right, title or interest in and to the demised premises; provided, however, if such default shall be of such nature that it cannot be remedied within thirty (30) days after receipt of such notice of default and the Lessee shall within such thirty-day period begin in good faith the work necessary for the curing of such default and shall carry on such work diligently and continuously, unless prevented by the causes herein enumerated, until such default is fully cured, then the Lessor shall not have the right to terminate this agreement.

24. This Lease shall be binding upon and inure to the benefit of the successors and assigns of Lessor and the heirs, executors, administrators and assigns of Lessee, provided, however, that Lessee shall not have the right to assign this agreement without the consent of Lessor except to a partnership, limited partnership, or corporation organized by Lessee and others for the prupose of conducting the operations herein referred to.

25. The Lessee covenants and agrees to do, prior to July 1, 1949, and prior to each July 1, of each succeeding year during the time that this Lease shall be in force and effect, all the assessment work required to be done upon the whole of said mining claims and those subsequently coming under this lease, and to furnish Lessor on or before June 15th of each year, commencing June 15, 1949, proof of the performance of said assessment work in sufficient detail to enable Lessor to make legal proof thereof.

to make legal proof thereof.

Any work done on the demised premises by Lessee applicable to the assessment year 1947 - 1948 may be applied by Lessor as assessment work for such year.

The Lessor shall have the right to patent the mining claims now or hereafter covered by this Lease in its own name and at its sole expense.

26. In case of any controversy between the Lessor and Lessee arising under this Lease the same shall be submitted to arbitrators for settlement. The party desiring arbitration shall nominate one arbitrator and shall notify the other party of such nomination and the other party shall within ten (10) days after receiving such notice nominate an arbitrator. Should these two arbitrators be unable to decide the matter submitted to them for arbitration, they shall jointly select a third party to act with them and the parties hereto agree to be bound by any decision of such two arbitrators appointed by them or such three arbitrators. The expenses of the arbitrators shall be paid accordingly as the arbitrators shall provide in their award, The persons to be selected as arbitrators shall be persons of experience in the mining business and shall be men of character, intelligence and standing, in no way related to either party or interested with Lessor or Lessee.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

ROBERT F. DORE

ROBERT F. DORE

LESSEE

JUST ASSOCIATES,
a Limited Partnership,

By E. RICHARD JUST
DOROTHY C. LEMBERGER
OLIVER P. ADAMS,
OLIVER P. ADAMS, Jr.

LESSOR

STATE OF CALIFORNIA)
: ss.
COUNTY OF LOS ANGELES)

On this 26th day of May, 1948, before me, the undersigned, a Notary Public, in and for the said County and State, personally appeared ROBERT F. DORE, known to me to be the person who executed the within instrument and acknowledged to me that he executed the same.

INWITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

GEO. T. RENAKER
Notary Public in and for said
County and State. (SEAL)

My Commission Expires Nov. 26, 1950

STATE OF CALIFORNIA)
: ss.
COUNTY OF LOS ANGELES)

On this 26 day of May, 1948, before me, the undersigned, a Notary Public in and for the said County and State, personally appeared E. RICHARD JUST, known to me to be a General Partner of JUST ASSOCIATES, the Partnership that executed the within instrument and known to me to be the person who executed the within instrument on behalf of the partnership herein named, and acknowledged to me that such partnership executed the same.

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

GEO. T. RENAKER
Notary Public in and for said
County and State.

(SEAL)

My Commission Expires Nov. 26, 1950

EXHIBIT A

A part of the foregoing "Lease Agreement" dated 25th day of May, 1948, between Just Associates as Lessor and Robert F. Dore as Lessee).

The Mining Claims referred to in and covered by said Lease Agreement are described in the Location Notices hereinafter referred to, said Claims being situated in the Silver Mountain Mining District, in the County of San Bernardino, State of California, said Claims being Lode claims, and all and every of those certain Claims located being and situate in Sections 30, 31 and 32, in Township 8 North, Range 6 West, San Bernardino Base and Meridian, in the County of San Bernardino, State of California, named, described and recorded in the mining Records of San Bernardino County, said State of California and named as follows:

	Location Notices recorded in	
	Book	at Page
La Qua-Scheelite No. 1	259	373
La Qua-Scheelite No. 2	259	373
La Qua-Scheelite No. 3	259	374
La Qua-Scheelite No. 4	259	374
La Qua-Scheelite No. 5	259	375
La Qua-Scheelite No. 6	259	375
Surprise No. 2	265	167
Surprise No. 4	265	169
Surprise No. 7	264	233
Surprise No. 8	264	234
Surprise No. 9	264	234
Blue Star No. 3	259	361
Blue Star No. 4	259	361
North Field Q No. 13	265	296
Atolaburg	259	415
North Field Q No. 1	265	287
North Field Q No. 3	265	289
North Field Q No. 4	265	289
North Field Q No. 5	265	290
North Field Q No. 7	265	292
North Field Q No. 8	265	292
North Field Q No. 9	265	293
	265	

said Mining Claims being 22 in number.

Notwithstanding anything appearing in said Lease Agreement to the contrary, the foregoing is the true and exact list of the Mining Claims covered by said Lease Agreement, and the Location Notice of each and every of said 22 Claims appear of record in said Mining Records of San Bernardino County in the Book and at the Page shown above opposite the name of each Claim, respectively.

NEW EXTENSION AGREEMENT

This New Extension Agreement made and executed this 23rd day of November, 1949, by JUST ASSOCIATES, a Limited Partnership, named in that certain Agreement of Lease dated the 26th day of May, 1948, at Los Angeles, California, and referred to in said Lease as the Lessor and ROBERT F. DORE, of Los Angeles, California, therein referred to as Lessee;

WITNESSETH, That:

Unavoidable delays, due to conditions and causes entirely beyond the control of either party to said Lease, have made necessary and advisable for the benefit of all parties to said Lease, that the Lessee have more time than one hundred and twenty days from and after the date of said Lease to enter upon the premises described therein and begin installation of necessary buildings, equipment, etc., as therein provided; and

WHEREAS, the Lessor and Lessee are mutually desirous that said result to be accomplished, additional time be granted and provided for the beginning of such installation;

NOW, THEREFORE, It is hereby agreed by and between said Lessor and said Lessee that the said period of 120 days specified in Paragraph "6" of said Lease be, and the same hereby is, enlarged and fixed at nine hundred eleven days instead of 120 days.

And the said Lessor does hereby consent and agree that said Lessee shall have, and have the benefit of, the additional period of time expiring on Nov. 23, 1950, within which to begin construction of special grinding, concentrating and drying machinery and equipment for installation on said mining property and to continue the construction of such special machinery and equipment with diligence, so that installation of the necessary buildings, machinery and equipment referred to, may be effected in the shortest practical amount of time and in no case later than six months after the expiration of said nine hundred eleven days additional extended time herein provided; and said Lessee does hereby consent and agree to said extension of time;

It being further understood and agreed by and between the Lessor and the Lessee hereto, that the provisions of Paragraph "17" of said lease be changed and modified and the same is hereby modified to read as follows, as though written in the original of said lease; - Modified Paragraph "17":

"Should the operations of Lessee become unprofitable because of changes occurring in the economic situation such that the actual price obtainable on standard contracts from reputable buyers for current delivery of 60% grade domestic scheelite is more than 20% less than the level of $27.50 per unit F.O.B. Los Angeles, California, as of June 1, 1948, or should the level of labor costs, or of overall production costs increase over 20% of the level existing as of June 1, 1948, per U.S. Department of Labor published statistics, whether due to inflation, governmental laws and regulations, or other causes beyond the control of the Lessee and should such causes affect the operations of the Lessee to the extent that said Lessee cannot operate and produce marketable concentrates at a reasonable profit, sufficient to protect his capital investment, then in that event the Lessee shall have the right at any time and from time to time at his option, to suspend operations on said mining property until the said condition has been corrected, but shall continue to do any required assessment work."

And both the Lessor and the Lessee hereto, do hereby agree and affirm that in no other particular is said Lease by this New Extension Agreement modified, but the same in all other particulars remains in full force and effect, and said period of nine hundred eleven days from and after the 26th day of May, 1948, is hereby substituted, and takes the place of 120 days so specified in Paragraph "6", and that the paragraph, captioned "Modified Paragraph "17" in this agreement is hereby substituted and takes the place of Paragraph "17" in the original lease

IN WITNESS WHEREOF, the said Lessor has caused its name to be subscribed by its General Partner, E. Richard Just, and the said Lessee, Robert F. Dore, has hereunto set his hand, and said parties have executed this instrument the day and year first above written.

JUST ASSOCIATES, A
Limited Partnership

By E. RICHARD JUST
General Partner

Lessor

ROBERT F. DORE

Lessor

NEW EXTENSION AGREEMENT

This New Extension Agreement made and executed this 6th day of October, 1950, by JUST ASSOCIATES, a Limited Partnership, named in that certain Agreement of Lease dated the 26th day of May, 1948 at Los Angeles, California, and referred to in said Lease as the Lessor, and ROBERT F. DORE, of Los Angeles, California, therein referred to as Lessee;

WITNESSETH, That:

Unavoidable delays, due to conditions and causes entirely beyond the control of either party to said Lease, have made necessary and advisable for the benefit of all parties to said Lease, that the Lessee have more time than one hundred and twenty days from and after the date of said Lease to enter upon the premises described therein and begin installation of necessary buildings, equipment, etc., as therein provided; and

WHEREAS, said Lessor and Lessee are mutually desirous that said result to be accomplished, additional time be granted and provided for the beginning of such installation;

NOW THEREFORE, It is hereby agreed by and between said Lessor and said Lessee that the said period of 120 days specified in Paragraph "6" of said Lease be, and the same hereby is, enlarged and fixed at ten hundred and ninety-one days instead of 120 days;

And the said Lessor does hereby consent and agree that said Lessee shall have, and have the benefit of, the additional period of time expiring on May 23, 1951, within which to begin construction of special grinding, concentrating and drying machinery and equipment for installation on said mining property and to continue the construction of such special machinery and equipment with diligence, so that installation of the necessary buildings, machinery and equipment referred to, may be effected in the shortest practical amount of time and in no case later than six months after the expiration of said ten hundred and ninety-one days additional extended time herein provided; and said Lessee does hereby consent and agree to said extension of time;

It being further understood and agreed by and between the Lessor and the Lessee hereto, that the provisions of Paragraph "17" of said Lease be changed and modified and the same is hereby modified to read as follows, as though written in the original of said lease; - Modified Paragraph "17";

"Should the operations of Lessee become unprofitable because of changes occurring in the economic situation such that the actual price obtainable on standard contracts from reputable buyers for current delivery of 60% grade domestic scheelite is more than 20% less than the level of $27.50 per unit F.O.B. Los Angeles, California, as of June 1, 1948, or should the level of Labor costs, or of overall production costs increase over 20% of the statistics, whether due to inflation, governmental laws and regulations, or other causes beyond the control of the Lessee and should such causes affect the operations of the Lessee to the extent that said Lessee can not operate and produce marketable concentrates at a reasonable profit, sufficient to protect his capital investment, then in that event the Lessee shall have the right at any time and from time to time at his option, to suspend operations on said mining property until the said condition has been corrected, but shall continue to do any required assessment work."

And both the Lessor and the Lessee hereto, do hereby agree and affirm that in no other particular is said lease by this New Extension Agreement modified, but the same in all other particulars remains in full force and effect, and said period of ten hundred and ninety-one days from and after the 26th day of May, 1948, is hereby substituted, and takes the place of 120 days so specified in Paragraph "6", and that the paragraph captioned "Modified Paragraph "17" in this agreement is hereby substituted and takes the place of Paragraph "17" in the original lease.

IN WITNESS WHEREOF, the said Lessor has caused its name to be subscribed by its General Partner, E. Richard Just, and the said Lessee, Robert F. Dore, has hereunto set his hand, and said parties have executed this instrument the day and year first above written.

JUST ASSOCIATES,
A Limited Partnership

By E. RICHARD JUST
General Partner

Lessor

Robert F. Dore

Lessee

STATE OF CALIFORNIA) ss.
COUNTY OF LOS ANGELES)

On this 6th day of October, 1950, before me, the undersigned, a Notary Public in and for the said County and State, personally appeared ROBERT F. DORE, known to me to be the person who executed the within instrument and acknowledged to me that he executed the same.

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

(SEAL)

Constance W. Adams
Notary Public in and for the County of Los Angeles, State of California.

My Commission expires 23 July, 1951

STATE OF CALIFORNIA) ss.
COUNTY OF LOS ANGELES)

On this 6th day of October, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared E. RICHARD JUST, known to me to be a General Partner of JUST ASSOCIATES, the Partnership that executed the within instrument and known to me to be the person who executed the within instrument on behalf of the partnership herein named, and acknowledged to me that such partnership executed the same.

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

(SEAL)

Constance W. Adams
Notary Public in and for the County of Los Angeles, State of California

My Commission expires 23 July, 1951

C
O
P
Y

Mr. Robert F. Dore,
257 South Spring Street, Rm. 442,
Los Angeles 12, California

Dear Mr. Dore:

In reply to your recent inquiry as to the reason why TUNGSTORE MINES abaondoned the prospecting and development of the tungsten property on Shadow Mountain, which was held under lease from JUST ASSOCIATES, I beg to submit the following:

A small portable mill was set up to make a milling test of the ore. This mill had a capacity of only thirty tons per day and proved to be very inefficient, both as to type of equipment and method of operation, recovering only about 50% or less of the recoverable Scheelite contained in the ore, as a test of the present tailings pile will prove.

The cost of water was high as the same was hauled by tank truck from Adelanto, a distance of 18 miles.

The lease under which the property was held called for a $1000.00 per month minimum guaranteed royalty, which conditions necessitated the installation and operation of a large milling plant to absorb these excessive costs.

Our plans at the time provided for a milling plant to handle approximately 500 tons of ore per day, with a further provision in mind to probably double this capacity at a later date. In this connection the excavation and foundation work for the first unit was installed, and also, with the equipment on the ground, much of the excavation work was done toward providing for the second milling plant unit.

The TUNGSTORE MINES at this time was engaged in operating three other tungsten properties, two of which were still in the development stage and did not have the necessary capital to carry out the proper development of the Shadow Mountain property.

The exhaustion of the ore body at TUNGSTORE MINES, Posey Creek property and the curtailment of its income, necessitated the abandonment of its Shadow Mountain, its Woody Cal and its Big Creek development operations.

Trusting these facts will answer your question, I beg to remain,

Very truly yours,

TUNGSTORE MINES,

By W. A. Trout
President.

SAMPLING

Three days and one evening were devoted to sampling of the deposits.

The area was examined at night with the aid of an ultra-violet lamp ~~at night~~ to determine ~~the feasibility of~~ sampling procedure and to obtain information ~~the nature of the~~ on the scheelite occurrence. ~~Due to the large~~ The area was sampled ~~to be covered, it was decided by the Bureau of Mines and U.S. Geological Survey personnel to~~ by cutting samples at more or less uniform intervals throughout the main trenches. Samples were also taken in some of the small pits and sections of other trenches where mineralization was noted by the aid of the ultra-violet lamp.

Samples, ~~however,~~ were taken during daylight hours in order to prevent predilection. Work was performed with moil and hammer. Vertical cuts were taken across the bedding. Location of sample cuts are shown by figure _____ . ~~A tabulation of the samples are shown by the following:~~

MINING

The manggement proposes to use open pit methods of mining and using an ultra-violet lamp as a guide to follow the ore. Some selective mining apparently ~~would~~ will be required, ~~and~~ the management proposes ~~to~~ leave ~~let~~ large pillars of waste ~~to stand where it would be funable and dispose of others on a waste dump~~ where it will not interfere with the mining.

MILLING

The management proposes ~~to install two concentrators for the milling operations~~ two stage of concentration for the ore. A dry concentrator at the mine to produce a concentrate that can be milled at Victorville. Their first proposal is to install a dry concentrator capable of treating 500 tons per day (24 hours) near the site of the mining operations, ~~and~~ reduce the bulk ~~to about~~ 7-1/2 tons.

The dry concentrates , according to the company, plans, would be hauled to a wet concentrator to be installed near Victorville, a distance of about 23 miles. The dry concentrates from the first plant would be processed at this wet concentrator into a finished product for market shipments.

Dry concentrator

The dry concentrator, according to Mr. R. S. Dore, president of the Princess Pat Mining Corporation, has been designed primarily for the ore at the Shadow Mountain property. It is called the D'ore Pneu-float Concentrator. Concentrators of this particular design have not been built or installed for commercial use at any known tungsten deposit. However, one small D'ore concentrating machine

has been built and set-up at the yard of Cottrell Engineering Company, 322 South Avenue 17, Los Angeles 31, Calif. Several batches of 500 pounds each of tungsten ores have been put through the mill. The tests, according to Mr. Dore and written reports vy consulting engineers employed by Mr. Dore, were reported on favorably. The machine according to these reports has a ratio of concentration of about 70 to 1 and makes a recovery of about 90 percent. The object of the dry concentration is due to lack of water at the mine site and also to reduce the bulk of the ore for haulage to the finishing plant.

Another novel feature of the dry concentration is the D'ore Grinding Mill. The mill consists of a cylindrical drum composed of a series of parallel rings mounted with controlled gaps through which the grind is discharged peripherally. The feed enters through the hollow center shaft through openings into the main drum. A large roller weighing about 4,600 pounds which is free to rotate inside the main drum creates the crushing actions. No D'ore grinding mill is known to be in operation at any tungsten deposit at the present time, except one which is set-up at the Cottrell Engineering Company, Los Angeles, California. This grinding mill has been designed by R. F. Dore who also designed the D'ore Pneu-float (dry) concentrator mentioned above, and has been reported as favorably adopted for scheelite grinding by consulting engineers employed by the company. The discharge from the mill is supposed to keep pace with the feed and prevent sliming or overgrinding.

A flow sheet of the dry concentrator plant is shown by the following sketch:

Wet Concentration

The dry concentrates are to be hauled about 25 miles to Victorville to a wet concentrator to be installed near the Mojave River. This finishing plant is to employ standard wet concentrating methods.

Refer to	Noted	Date
	Hall	8/7
Answered		

July 31, 1951

Mr. Robert F. Dore, President
Princess Pat Mining Corporation
Room 442
257 South Spring Street
Los Angeles 12, California

Dear Mr. Dore:

DMA-365

I have given your proposition most careful consideration. It is one of the few cases that I have actually studied myself and I have come to the following conclusions: In the first place from all of the evidence submitted, I feel that there is tungsten present on your property possibly in commercial quantities. In the second place I feel that the present development work has not blocked enough ore to justify a $550,000 loan.

I might say that I have been examining mines for a period of approximately 30 years and I do not believe that a prudent investor would put up a $550,000 concentrating plant on the ore reserves at Princess Pat as now developed. Mr. Harlan tells me that the showings in the shaft are very good from the top to the bottom. If two or three more holes in the ore zone demonstrated the depth as shown in the present shaft and samples were at least .5% WO3, I believe that you would then be in a position to justify a loan of the size you requested. I do not feel that we can justify the loan of Government funds to build a 500 ton mill on the present showings and will have to deny your original application. If you care to submit an application for an exploration loan we will be glad to consider it.

I regret very much that it is necessary to turn your original proposition down and I hope that something along the lines I have suggested can be worked out.

Very truly yours,

TLyon:ch

Tom Lyon

cc: Admin. Reading File
Reports and Records
Field Team Reg. III
Files
Holderer

Tom Lyon, Director
Supply Division

P.S. You may send this on to Miller in S.F. if you [illegible] under personal cover please.

HOTEL UTAH

AT THE CROSSROADS OF THE WEST

MAX CARPENTER, MANAGER

SALT LAKE CITY 10, UTAH

Dear Mr. Johnson, July 6, 1951

After receiving the assay of your boys' samples of Princess Pat I compared results with my day and night observations and was surprised to note how closely my own conclusions, sample for sample, compared with your assays.

Clute's daylight sampling, done without influence or pressure averaged almost exactly the same as yours; his sampling by U.V. lamps, assisted by the two promoters and the owner, averaged approximately 7 times the day sampling.

It will be comforting to you to know that my experience with a certain type of Los Angeles promoter began about 1917 or 1918 since which I have never let down my guard when considering anything proposed from such a source. The Princess Pat application and the manner in which the stage was set for its trip through DMA only confirm the wisdom of caution adopted many years ago in respect of such cases.

(over)

PHONE 3-2661 TELETYPE SU 166

I telephoned a brief report to Tom Lyon the conclusion of which was that there is tungsten ore at the property which in due time and proper manner should be exploited but not in the manner proposed in Docket 365.

After I report in detail in Washington I think your Field Team need have no concern about a Consultant having been assigned to cover your job, - I am well beyond any pressure that a promoter can apply, either politically or professionally.

Your friendly cooperation in my investigation of Docket 365 is greatly appreciated. I hope we may meet for a visit some day.

Sincerely

J D Harlan

Permanent address
2017 5th Ave. N.
Seattle 9, Wash.

P.S.

I expect to be here through Monday July 9, in Denver Tuesday and then on to D.C.

JDH

Robt. F. Mone
257 So Spring St
Rm 442
Los Angeles 12

May 3, 1951

Memorandum

To: P. R. Bradley, Jr., Chairman, Tungsten Committee, Defense Minerals Administration, Washington, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: DMA-365--Princess Pat Mining Corp., Shadow Mountains, San Bernardino County, California--Tungsten

Region III DMA Field Team has had its engineers and geologists examine the subject tungsten property. Attached are four copies of a report on the property by E. J. Matson and L. F. Muller, Mining Engineers, Bureau of Mines, and Paul C. Bateman and William P. Irwin, Geologists, U. S. Geological Survey. The conclusions reached by the examining engineers and geologists are that the ore reserves on the property are too small and too low grade to warrant granting the $550,000 loan requested. The reserves amount to only 15,000 tons of ore to a depth of 25 feet, containing about 5,000 units of WO_3.

Ward Smith, Geological Survey representative on the DMA Field Team, Region III, and I have studied the report and concur in the conclusions reached by the field engineers and geologists.

The subject docket is being returned herewith.

H. C. MILLER

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

Attachments (Docket file)

Copy to: Ward C. Smith, Geological Survey

HCMiller:am

Files

Chrono

P. O. Box 1551
Reno, Nevada

May 3, 1951

Paul C. Bateman
U. S. Geol. Survey
102 Old Mint Bldg.
5th & Mission Sts.
San Francisco 3, Calif.

Dear Paul:

Received the copy of the Princess Pat property, DMA-365. The report looks very good. It will be placed in the Bureau files.

No, you do not need to send the tracing of the sample map to us. Just keep it in your files along with your other tracings.

Fred and I appreciated the fine cooperation received from you and Porter.

Sincerely yours,

E. J. Matson

cc: A. C. Johnson

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

May 1, 1951

Subject: DMA-365 Princess Pat Mining Corp., Shadow Mountain, San Bernardino County, California

Mr. H. C. Miller
U. S. Bureau of Mines
P. O. Box 1551
Reno, Nevada

Dear Mr. Miller:

Enclosed is the report of the field team on DMA-365, the Princess Pat Mining Corp., San Bernardino County, California. The report on the ore reserves is exhaustive and demonstrates conclusively that the request for a $550,000 loan is not warranted. The participating members of both the Geological Survey and the Bureau of Mines concurs in this conclusion.

Sincerely yours,

Paul

Paul C. Bateman

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

May 1, 1951

Subject: DMA-365 Princess Pat Mining Corp., Shadow Mountain, San Bernardino County, California

Mr. E. J. Matson
U. S. Bureau of Mines
P. O. Box 1551
Reno, Nevada

Dear Ed:

Enclosed is a copy of the report on the Princess Pat property, DMA-365, which I am submitting today. I could wish for an opportunity for you to criticize the report before sending it in, but feel confident that we are in agreement on the main conclusion.

The docket seemed to me to be well supplied with photographs of the property, so I am returning those you took. Would you like the tracing of the sample map returned also?

It has been a pleasure to work with you and Fred.

Best regards to you both.

Sincerely yours,

Paul

Paul C. Bateman

CC: H. C. Miller

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III - CALIFORNIA-NEVADA

DMA-365, Princess Pat Mining Corp., Shadow Mountains
San Bernardino County, California

W.J. Mateson and L. F. Muller,
U.S. Bureau of Mines

Paul C. Bateman and William P. Irwin,
U.S. Geological Survey

INTRODUCTION

The Princess Pat tungsten property is at the north end of the Shadow mountains in San Bernardino County, California about 21 airline miles northwest of Victorville. It is in the SW. ¼ sec. 30, T. 8 N., R. 6 W., S.B.B.M. at an elevation of 3,400 feet. The property is readily accessible from Victorville via Adelanto. A good gravel road extends west 5 miles to the property from U. S. highway 395 fourteen miles north of Adelanto. Tungsten was discovered on the property in September 1937 and in 1938 it was leased by Just Associates, who had acquired control of the claims, to Shadow Mountain Tungsten Mines, Ltd. This company, an affiliate of the Tungstore Mining Corp., dug all of the workings on the deposit and constructed a 50-ton mill. An attempt to mine and mill ore from the central open cut proved unprofitable, and the lease was abandoned in February 1939 after a reported 3,000 tons of ore had been treated. The property has been idle since then.

The property is held by Robert F. Dare, President of Princess Pat Mining Corp. on a lease from Just Associates. In January 1951, The Princess Pat Mining Corp. applied for a government loan of $350,000 to provide necessary funds for starting a 500-ton open pit operation and for the erection and operation of an ore dressing and beneficiation plant. The Defense Minerals Administration requested

a field examination of the property to determine the grade and volume of the ore reserves, the molybdenum content of the concentrate and the feasibility of the proposed mining and milling operations. Paul G. Bateman and Porter Irwin of the Geological Survey spent 7 days at the deposit making a geologic study of the property. In the preparation of the report they are responsible for the sections on Introduction, Workings, Geology and Ore Reserves. K. J. Watson and L.F. Haller of the Bureau of Mines cut 72 samples, which were assayed in the Reno laboratories of the Bureau of Mines, and wrote the sections of the report on Sampling, Mining and Milling. Because the grade and volume of the ore was found to be insufficient for favorable consideration of the loan application, they did not determine the molybdenum content of the scheelite or thoroughly investigate the feasibility of the proposed milling methods.

WORKINGS

The main working is a long, shallow bulldozer trench that zigzags for 100 feet up a southwesterly-sloping topographic nose. On the uphill side the trench is cut to an average depth of 5 feet beneath the original surface, supplying a good surface for sampling, but the floor and downhill side of the trench are largely covered with rubble. At the northeast end of the zigzag trench is a u-shaped cut from which ore was mine in the 1938 operation of Shadow Mountain Tungsten Mines, Ltd. This cut, open to the east, is about 30 feet long, 70

feet wide, and the western face is about 15 feet high. A few feet south of the open cut is a 6 by 8-foot shaft reported variously to reach to a depth ranging from 52 to 70 feet. This shaft was not entered during the examination, but lagging the full length of the shaft and rubble in the bottom would have made it difficult to obtain any pertinent information from it if it had been accessible. Two hundred feet north of the open cut and the shaft a 240-foot long northwesterly -trending bulldozer trench cuts across a 180-foot long north-trending bulldozer trench. In addition, approximately 70 shallow prospect pits have been dug in areas between the bulldozer trenches. All of the workings are shown on the accompanying geologic map.

GEOLOGY

The deposit is of the contact metamorphic type and scheelite is the only tungsten-bearing mineral that has been recognized. The geology of the mine area is shown on the accompanying geologic map and the structure on the fence diagram. The area explored by workings consists of bluish-white medium-grained marble, which is overlain on the southeast by dark gray mica schist. Over most of the mapped area the bedding is flat or gently-dipping, but in the east part the beds dip steeply east, accounting for the presence of the schist.

Dikes and sills of felsic granite intrude both the marble and the schist, recrystallizing the wall rock material several feet from the granite. The largest mass of granite is a sill-like mass localized

along the contact between marble and schist in an area where gently-dipping bedding on the west meets more steeply dipping bedding on the east. Locally, the granite contains abundant inclusions of schist and marble, and is cut by numerous veinlets of quartz. Much of the marble, in contact with granite is altered to garnet tactite, which in places contains sparse molybdenite. In addition to tactite the marble locally is replaced by light-colored silicate rock, and is penetrated and replaced by quartz.

The largest mass of quartz and light-colored silicate rock is in the open cut, but quartz is also exposed in the zigzag trench southwest of the open cut. Like the granite sill farther southwest the quartz mass at the open cut may be localized in the fold axis where the gently-dipping beds to the west meet the more steeply dipping beds to the east, but the actuality of such structural control cannot be proved.

Scheelite in fine, whitish-fluorescent crystals, is locally present in tactite, light-colored silicate rock, and quartz, but is most abundant in association with the quartz. Typically, the scheelite occurs in streaks a few inches wide parallel to bedding or to cross-cutting fractures sealed with quartz. These richer scheelite concentrations are separated from one another by several feet of barren or nearly barren rock. The quartz and light-colored silicate rock on the south and west faces of the open cut is the largest scheelite-bearing mass exposed, but smaller scheelite-bearing areas are exposed in the zigzag trench. The main areas of scheelite concentration are shown on the accompanying geologic map.

SAMPLING

Three days and one evening were devoted to sampling of the deposits. The area was examined at night with the aid of an ultra-violet lamp to determine sampling procedure and to obtain information on the scheelite occurrence. Samples were taken at more or less uniform intervals throughout the main trenches. Samples were also taken in some of the small pits and sections of other trenches where mineralization was noted by the aid of the ultra-violet lamp.

Samples were taken during daylight hours in order to prevent predilection. Work was preformed with mail and hammer. Vertical cuts were taken across the bedding. Location of sample cuts are shown on the accompanying map.

ORE RESERVES

The sampling indicates that the only block of material that is large enough to mine and that also contains sufficient tungsten conceivably to support a mining operation is in and around the open cut north of the shaft. Here the average WO_3 content of seven samples, including sample 38 which is separated from the other samples by the width of the open cut, omiting samples 46A and 47A which have an average WO_3 content of only 0.12%, is 0.34 percent (see geologic map). The area embraced by the sample localities, including the rubble-covered floor of the pit between sample 38 and the other samples, is about 3,700 square feet. Assuming 12 cubic feet to the ton (a reasonable assumption for quartz-rich rock of the kind in the open pit) this area may be underlain by 3 [illegible] tons of ore per foot of depth, containing 100 units of WO_3.

The geologic factors that have localized the scheelite here are not definitely established, but making the assumption that seems geologically most sound the reserves amount to only a few hundred tons of ore. The assumption made is that the ore is localized along bedding planes and therefore does not continue downward beneath the floor of the open cut where the beds dip gently. The localization of the scheelite along the bedding is suggested by the low WO_3 content of samples 46A and 47A, both of which are from rock stratigraphically beneath the ore in the vicinity of the open cut. Furthermore, the only noteworthy scheelite-bearing mass, the quartz mass 100 feet southwest of the open cut at sample localities 30 and 31, dips eastward concordant with the bedding. Continuity of the ore between the open cut and the quartz mass at samples 30 and 31 is precluded by the low WO_3 content of samples in the intervening area. Samples 36, 37,38, and 40 contained very little tungsten and sample 39 contained only 0.23 percent WO_3 (see sample map). The validity of these analyses is substantiated by close agreement between the analytical results and visual estimates, made under ultra-violet light, of the WO_3 content.

Making the more favorable but less probable assumption - that the ore zone extends vertically beneath the floor of the open cut undiminished in both size and WO_3 content - the ore zone to a depth of 25 feet may total 7,500 tons of ore containing 2,800 units of WO_3. A depth of 25 feet is probably close to the maximum depth practical for open pit

mining of an ore body of the dimensions of this one. Mining by more expensive underground methods is precluded by the low WO_3 content of the ore. If the additional favorable assumption is made that the ore in the pit is continuous with that at sample localities 30 and 31, and that the low grade samples in the intervening area are in horses of country rock enclosed in ore, a additional volume of ore approximately equal to that postulated around and beneath the open cut may exist. Thus, the total reserves on the property to a depth of 25 feet, on the most favorable possible assumptions, may be inferred to amount to as much as 15,000 tons of ore containing 5,000 units of WO_3.

At several other places along the line of workings scheelite concentrations are indicated by sampling and by examination under ultra-violet light. However, in each of these places the scheelite-bearing rock is a small lense-like body exposed for only a few square feet at most, and is separated from other scheelite-bearing rock by many feet of very nearly barren material. Such widely-spaced lenses and pods of scheelite-bearing rock are negligible in the calculation of ore reserves.

MINING

The management proposes to use open pit methods of mining and use an ultra-violet lamp as a guide to follow the ore. Some selective mining

apparently will be required. The management proposes to leave large pillars of waste where it will not interfere with their mining.

The open cut apparently is the only mineralized area that would support mining activities. The area, however, is too small for an output of 500 tons daily production.

A weighted average of samples of mineable ore at the pit location is shown by the following tabulations:

Sample No.	Width	% WO_3	Product	
43	7.5	0.28	2.210	
44	7.0	.23	1.610	
45	5.5	.39	2.145	
46	7.5	.38	2.850	
47	10.0	.37	3.700	
48	10.0	.46	4.600	
	47.5		17.115	Av. 0.36 % WO_3 Av. width of sample 7.9'

A weighted average of samples in the pit, taking in a little larger area, is shown by the following:

42	3.3	0.09	0.297	
43	7.5	.28	2.210	
44	7.0	.23	1.610	
45	5.5	.39	2.145	
46	7.5	.38	2.850	
47	10.0	.37	3.700	
48	10.0	.46	4.600	
49	4.0	.10	.400	
	54.8		17.812	Av. 0.33% WO_3 Av. width of sample 6.9'

MILLING

The management proposes two stages of concentration for their ore. A dry concentrator to be installed near the mine location and

capable of treating 500 tons of ore daily would make a semi-finished concentrate of about 7-1/2 tons containing from 7% to 15% WO_3.

The 7-1/2 tons of dry concentrate would then be hauled to a finishing plant to be installed at Victorville, a distance of 23 miles for final treatment. The finishing plant is to employ standard wet concentrating methods.

The use of dry concentration in the treatment of tungsten ores has not been universally adopted by mining companies. The Hydrometallurgical and Ore Dressing Branch of the Bureau of Mines, Region III, has no information on this type of treatment other than that described in the docket report.

However, one small D'Ore dry concentrating machine and a D'Ore grinding mill apparently has been built and set up at the yard of Cottrell Engineering Co., 322 South Ave., 17, Los Angeles 31, California.

In the event that a Government loan is justified, it would be suggested that the feasibility of the dry concentration be investigated by a Metallurgist from the Hydrometallurgical and Ore Dressing Branch of the Bureau of Mines.

SUMMARY OF CONCLUSIONS

The ore reserves on the property are too small and too low grade to warrant granting the $500,000 loan requested. At best

the reserves amount to only 15,000 tons of ore to a depth of 25 feet, containing about 5,000 units of WO_3. More probably the reserves are considerably less. Statistically, the number of samples seem more than ample to indicate all blocks of ore of sufficient size to mine by open pit methods at the rate of 500 tons per day. The validity of the sampling is substantiated by close agreement between the analytically determined WO_3 content of the samples and visual estimates of the WO_3 content of the rock in place made under the ultra-violet light.

P. O. Box 1551
Reno, Nevada

April 23, 1951

Memorandum

To: H. C. Miller, Regional Director, Region III

From: Chief, Mining Division, Region III

Subject: Princess Pat Application Docket DMA-365

Mr. Matson has completed his section of the portion of the Princess Pat report and it is being forwarded to Mr. Bateman to be included in his final report.

Mr. Bateman had the Docket DMA-365 and in compliance with your request of March 27, the correspondence on the Princess Pat is enclosed.

A. C. Johnson

Encls.

P. O. Box 1551
Reno, Nevada

April 20, 1951

Mr. Paul Bateman
102 Old Mint Bldg.
5th & Mission Sts.
San Francisco 3, Calif.

Dear Paul:

A tracing (map) and one copy showing the location and tabulation of assays are being sent under separate cover to you today by mail. You can make as many copies from the tracing as needed.

The information on sampling, mining and milling to be incorporated in your report is also submitted in this letter. The average WO_3 content around the pit area, which seems to be the only place where any mineralization of significance is denoted by the sampling, can be taken as 0.36 or 0.33. The 0.36 value might be better to use; it eleminates some waste on both ends of the pit rim. However, suit yourself. You know the attitude of the beds better so you can extend the area out for tonnage.

Sincerely yours,

A. C. Johnson, Chief
Mining Division
Region III

Attachments: Analyses : Letter dated 3/26/51
Enclosed are pictures on the Princess Hall 7/51

DOCKET DMA-365

PRINCESS PAT MINING CORP.
San Bernardino County, Calif.

SAMPLING

Three days and one evening were devoted to sampling of the deposits. The area was examined at night with the aid of an ultra-violet lamp to determine sampling procedure and to obtain information on the scheelite occurrence. Samples were taken at more or less uniform intervals throughout the main trenches. Samples were also taken in some of the small pits and sections of other trenches where mineralization was noted by the aid of the ultra-violet lamp.

Samples were taken during daylight hours in order to prevent predilection. Work was performed with moil and hammer. Vertical cuts were taken across the bedding. Location of sample cuts are shown in figure_____.

MINING

The management proposes to use open pit methods of mining and use an ultra-violet lamp as a guide to follow the ore. Some selective mining apparently will be required. The management proposes to leave large pillars of waste where it will not interfere with their mining.

The pit apparently is the only mineralized area that would support mining activities. The area, however, is too small for an output of 500 tons daily production.

A weighted average of samples of mineable ore at the pit location

is shown by the following tabulation:

Sample No.	Width	% WO_3	Product	
43	7.5	0.28	2.210	
44	7.0	.23	1.610	
45	5.5	.39	2.145	
46	7.5	.38	2.850	
47	10.0	.37	3.700	
48	10.0	.46	4.600	
	47.5		17.115	Av. 0.36 % WO_3 Av. width of sample 7.9'

A weighted average of samples in the pit, taking in a little larger area, is shown by the following:

42	3.3	0.09	0.297	
43	7.5	.28	2.210	
44	7.0	.23	1.610	
45	5.5	.39	2.145	
46	7.5	.38	2.850	
47	10.0	.37	3.700	
48	10.0	.46	4.600	
49	4.0	.10	.400	
	54.8		17.812	Av. 0.33 % WO_3 Av. width of sample 6.9'

MILLING

The management proposes two stages of concentration for their ore. A dry concentrator to be installed near the mine location and capable of treating 500 tons of ore daily would make a semi-finished concentrate of about 7-1/2 tons containing from 7% to 15% WO_3.

The 7-1/2 tons of dry concentrate would then be hauled to a finishing plant to be installed at Victorville, a distance of 23 miles, for final treatment. The finishing plant is to employ standard wet concentrating methods.

The use of dry concentration in the treatment of tungsten ores has not been universally adopted by mining companies. The Hydro-

metallurgical and Ore Dressing Branch of the Bureau of Mines, Region III, has no information on this type of treatment other than that described in the docket report.

However, one small D'Ore dry concentrating machine and a D'Ore grinding mill apparently has been built and set up at the yard of the Cottrell Engineering Co., 322 South Ave., 17, Los Angeles 31, Calif.

In the event that a Government loan is justified, it would be suggested that the feasibility of the dry concentration be investigated by a Metallurgist from the Hydrometallurgical and Ore Dressing Branch of the Bureau of Mines.

DOCKET DMA-365

PRINCESS PAT MINING CORP.
San Bernardino County, Calif.

SAMPLING

Three days and one evening were devoted to sampling of the deposits. The area was examined at night with the aid of an ultra-violet lamp to determine sampling procedure and to obtain information on the scheelite occurrence. Samples were taken at more or less uniform intervals throughout the main trenches. Samples were also taken in some of the small pits and sections of other trenches where mineralization was noted by the aid of the ultra-violet lamp.

Samples were taken during daylight hours in order to prevent predilection. Work was performed with moil and hammer. Vertical cuts were taken across the bedding. Location of sample cuts are shown in figure_____.

MINING

The management proposes to use open pit methods of mining and use an ultra-violet lamp as a guide to follow the ore. Some selective mining apparently will be required. The management proposes to leave large pillars of waste where it will not interfere with their mining.

The pit apparently is the only mineralized area that would support mining activities. The area, however, is too small for an output of 500 tons daily production.

A weighted average of samples of mineable ore at the pit location

is shown by the following tabulation:

Sample No.	Width	% WO_3	Product	
43	7.5	0.28	2.210	
44	7.0	.23	1.610	
45	5.5	.39	2.145	
46	7.5	.38	2.850	
47	10.0	.37	3.700	
48	10.0	.46	4.600	
	47.5		17.115	Av. 0.36 % WO_3 Av. width of sample 7.9'

A weighted average of samples in the pit, taking in a little larger area, is shown by the following:

42	3.3	0.09	0.297	
43	7.5	.28	2.210	
44	7.0	.23	1.610	
45	5.5	.39	2.145	
46	7.5	.38	2.850	
47	10.0	.37	3.700	
48	10.0	.46	4.600	
49	4.0	.10	.400	
	54.8		17.812	Av. 0.33 % WO_3 Av. width of sample 6.9'

MILLING

The management proposes two stages of concentration for their ore. A dry concentrator to be installed near the mine location and capable of treating 500 tons of ore daily would make a semi-finished concentrate of about 7-1/2 tons containing from 7% to 15% WO_3.

The 7-1/2 tons of dry concentrate would then be hauled to a finishing plant to be installed at Victorville, a distance of 23 miles, for final treatment. The finishing plant is to employ standard wet concentrating methods.

The use of dry concentration in the treatment of tungsten ores has not been universally adopted by mining companies. The Hydro-

metallurgical and Ore Dressing Branch of the Bureau of Mines, Region III, has no information on this type of treatment other than that described in the docket report.

However, one small D'Ore dry concentrating machine and a D'Ore grinding mill apparently has been built and set up at the yard of the Cottrell Engineering Co., 322 South Ave., 17, Los Angeles 31, Calif.

In the event that a Government loan is justified, it would be suggested that the feasibility of the dry concentration be investigated by a Metallurgist from the Hydrometallurgical and Ore Dressing Branch of the Bureau of Mines.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

102 Old Mint Building
San Francisco 3, California

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
APR 18 1951
SAN FRANCISCO, CALIFORNIA

April 17, 1951

Subject: DMA-365, Princess Pat Mining Corporation

Refer to	Noted	Date
	HCM	4/18
Answered		

Mr. Robert F. Dore, President
Princess Pat Mining Corporation
257 South Spring Street, Room 442
Los Angeles 12, California

Dear Mr. Dore:

This is in reply to your letter of April 16 regarding the report on the Princess Pat.

We have not as yet received results of the analyses of the samples which were taken by the U. S. Bureau of Mines, and until we receive these results we are unable to complete our report. However, we hope to have the analyses and complete our report within a few days.

Sincerely yours,

Paul C. Bateman
Geologist

CC: H. C. Miller

OFFICE: ROOM 442
257 SO. SPRING ST.
LOS ANGELES 12, CALIF.

HARRY LEE MARTIN
VICE-PRES. & SEC'Y
TEL. MA. 6-7846

MINING PROPERTY
NEAR ADELANTO, CALIF.

Princess Pat Mining Corporation

April 14, 1951

Board of Directors,
Princess Pat Mining Corporation
257 South Spring Street
Los Angeles 12, California.

Gentlemen:

In connection with our application for a loan of $500,000.00 to bring out scheduled production on our Tungsten property near Adelanto, California, you, of course, are fully aware that the Defense Minerals Administration authorized the field team, consisting of Mr. Paul C. Bateman and Mr. Will Irving, of the United States Geological Survey office in San Francisco, to make a detailed geological topographic map of the opened up area, to check the map made by our geologist, Mr. Walker S. Clute, and also to sample the opened up area contained in the enclosed map which is a part of our application, the sampling work to be done by the United States Bureau of Mines. Mr. Paul C. Bateman, on arrival at the property, telephoned the U.S.Bureau of Mines Regional Office at Reno, and Mr. E.J.Hatson and Mr. L.F.Muller were sent to the property from that office to do the sampling job; the assays of such samples to be run at the Reno offices of the United States Bureau of Mines.

The writer, accompanied by our geologist, Mr. Walker S. Clute, was on the ground when the sampling work started, and the writer offered his suggestions that the property should be sampled in the same manner as the proposed plan for mining the scheelite deposit. Also, that the samples in this deposit should be not less than 6 inches in width and a fairly large sample taken, worked down to approximately ten pound sample to be assayed. These suggestions were offered to Mr. Hatson and Mr. Muller, endeavoring to explain just how the mining would be carried on so as to eliminate waste materials from going through the milling plant.

We were informed by Mr. P.C.Bateman, of the U.S.G.S., that the final report to the D.M.A. would be prepared by him after he had received the assay reports from the samples taken from the U.S. Bureau of Mines office in Reno.

The proper way to sample a scheelite deposit, of course, is always a matter of opinion, and it is the experience and opinion of this writer, that insofar as no scheelite ore body will run uniform, and that it is unquestionably practical to mine scheelite ore with the use of the ultra violet mineral light, it should be just as

practical to sample an ore body in the same manner, guided by the light, so that grading and milling quantities of waste materials can be avoided, and at the same time get a much truer picture by the assay reports of the value of the ore body itself.

In view of the above opinion, the writer, accompanied by Mr. E. Richard Just, visited the property April 12th, and took a picture of each of the 72 samples cut by Mr. Matson and Mr. Muller, and made comments as to how each sample was cut. The following is a list of the 72 samples taken by number and the comments of the writer:

Sample Number.	Comments
1.	No channel cut, few chips showing
2.	" " " " " "
3.	" " " " " "
4.	" " " " " "
5.	2' channel x 3" wide
6.	3" " x 2" "
7.	18' " x 3" "
8.	No channel cut. Cut mark at this spot "O"
9.	No channel cut; chip marks only
10.	" " " " " "
11.	" " " " " "
12.	3' channel, 3" wide
13.	18' " 2" "
14.	4' narrow channel
15.	4' " "
16.	3' chip channel cut narrow
17.	Chip corner exposed rocks only
18.	3' chip channel 2" to 3"
19.	4' " " " " "
20.	3' " " " " "
21.	2' chipped corner sample
22.	1' narrow chip channel
23.	3' sample 3" to 4"
24.	3' " " " "
25.	Very poorly taken sample
26.	30" channel, 2" to 3" wide
27.	3' " " " " "
28.	4' " 3" to 4" "
29.	Poor Scheelite chip sample
30.	" " " "
31.	3' channel, 3" to 4" wide
32.	5' narrow channel by 1"
33.	4' channel 2" to 4" wide
34.	Scattered chip sample

Sample Number	Comments
35.	2' channel, 3" to 4" wide
36.	3" " " " " "
37.	Scattered corners chipped only
38.	4' chip 1" to 2" wide
39.	3½" channel, 2" to 3" wide
40.	4' chip channel, 2" to 3" wide
41.	2' scattered corners, chipped only
42.	Few scattered chips.
43.	" " "
44.	" " "
45.	" " "
46.	No channel and no chip marks
46A.	" " " " " "
47.	" " " " " "
47A.	" " " " " "
48.	Wide channel cut 10' long x 6" wide
49.	4' " x 1' wide
50.	10' channel cut x 1' wide
51.	No channel cut; narrow chip marks
52.	Narrow chip channel
53.	1' channel, 3" to 7" wide, poorly taken
54.	No indication of sample cut
55.	1' channel x 1"
56.	No channel cut
57.	No " "
58.	Few chips showing only, poorly taken
59.	No channel cut, lengthy chipped area in easy places (small)
60.	No channel cut.
61.	" " " , light chip marks
62.	Channel cut 2' x 6" wide
63.	(Pit) channel 6' x 2"
64.	" No channel, few chips
65.	" " " " "
66.	" " " , poor sampling
67.	" Good channel cut 4' c 2"
68.	" No channel, few chips
69.	" " " , " corner chips
70.	" " " , poor sampling, our mark "O"
71.	4' to 5' good channel cut 3" wide
72.	2' chipped, 2" wide.

Examination, at night with the use of ultra violet mineral light of the area where samples were taken by Mr. Matson and Mr. Muller, of the U.S. Bureau of Mines, and particularly of sample cut marks or channels and comments of the writer written down by Mr. Just on the ground as the work was done, as follows:

Sample No.	Comments
1.	Small showing of scheelite above and to right of sample marking. Strong showing 5'x6' to left and between sample 1 and sample 2.
2.	No showing where sample is painted, strong showing above and below continuing around corner of excavation to sample 3.
3.	Strong showing of scheelite at sample; should assay 1% or better. Narrow streaks of same showing between samples 3 and 4.
4.	Small showing where sample is painted; small showings of low grade between samples 4 and 5.
5.	Good showing of fine scheelite in sample channel with intermittent showings continuing to sample 6.
6.	Small showing at bottom of channel; this area of trench wall badly weathered. Good streaks of high grade showing between 6 and 7, should assay 1% or better.
7.	Wide sample taken in high grade ore, should assay 1% or better with high grade streaks continuing close to sample 8.
8.	Very faint showing where sample was cut. No trench wall exposed between 8 and 9. Our previous mark at sample 8 "0". Good sheelite showing in loose material approximately 40'.
9.	Exceptional high grade in area of sample cut; should assay 2% or better. High grade showing between 9 and 10 wherever trench wall is exposed and in loose broken material.
10.	Good showing all around sample; unable to trace any sample cut at night. High grade showing between 10 and 11 wherever trench wall is exposed and in broken loose material
11.	Sample cut through exceptionally high grade where number is painted. Numerous high grade streaks between 11 and 12.
12.	Unable to trace sample channel at night but showing of fair grade ore all around number. High grade streaks between 12 and 13 on exposed wall and loose material.
13.	Good showing in sample channel also a good showing in intermittent exposures or trench wall and loose material.

Sample No.	Comments
14.	Fair showing at sample; exceptionally good showing 4' to left of sample in exposed wall and loose material continuing to 15.
15.	Exceptionally good showing; sample should assay high. Exceptionally good showing 15 to 16.
16.	Very little showing at exact spot where number is painted. Slight showing between 16 and 17.
17.	Small showing at number; very little showing between 17 and 18.
18.	Very little showing; trench wall badly weathered between 18 and 19. Good showing only in loose material.
19.	No showing at sample. High grade showing 4' to left in wall and continuing heavy showing to 20.
20.	Exceptionally good showing in and around sample and continuing in exposed wall and loose material to end of trench.
21.	No showing in sample cut except in loose material. Slight showing between 21 and 22.
22.	No showing where sample was taken; exposed wall badly weathered; intermittent showing between 22 and 23 and fair showing in loose material.
23.	Fair showing in sample cut; showing in exposed walls intermittent and all through loose material between 23 and 24.
24.	No showing in actual cut of sample; exceptionally good showing 10' to right of sample over 4' wide area; Wall of trench to 25 badly weathered.
25.	No showing in sample cut; slight showing in weathered wall 12' to right.
26.	Good slight showing within 18" of sample cut; no showing in sample channel.
27.	Slight showing all around sample and in loose material; badly weathered wall between 27 and 28.
28.	Some showing in channel cut; high grade streak 8' to left; exceptionally high grade wide streak to left of sample 28 continuing through sample 29.
29.	High grade at sample continuint to sample 30.

Sample No.	Comment
30.	High grade at sample and continuing through to 31.
31.	Good ore at 3'; good showing in wall all the way through 32.
32.	Good showing to 5' left of sample; wall badly weathered for 10'; strong showing again of high grade streaks to sample 33.
33.	Sample may assay light but good showing to end of trench.
34.	Good showing; can't tell where sample cut but good showing all around; good showing in loose material between 34 and 35.
35.	No showing at 35 except in loose material; good showing 4' to right in places and continuing to 36.
36.	Good showing; good showing in exposed walls between 36 and 37.
37.	Exceptionally high grade to within 6" of sample cut. Sample 37 was taken by knocking easy corner of laminated rock exposures High grade continuing on from 37 in exposed walls through 38.
38.	High grade showing.
39.	Strong showing through 40.
40.	High grade to within 3' of 41.
41.	Good showing all around above and below but don't thinksample will assay very high.

EXCAVATION #3

42.	Very Good ore.
43.	Excellent ore.
44.	" "
45.	" "
46.	" "
46.a	" "
47	" "
47.a	" "
48	" "
49	" "

Sample No.	Comments
50.	Excellent milling ore all around.
51.	Good - lowest grade where sample was taken; good ore all around.
52.	Very excellent, high grade.
53.	Strong showing of scheelite continuing north; long cut of broken ore for mill feed. Excellent scheelite showing. Large body of loose material extending 75' north. This ore was broken for assessment work for 1950-51.
54.	No showing; walls badly weathered. Scheelite showing 4' south; large quantity below 54 with strong scheelite showing.
55.	Good showing in place, continues along south wall for 10'; also extending north above 5'.
56.	Good showing continuing in exposed walls 20' to right.
57.	No showing; walls badly weathered; good showing in loose material.
58.	Medium showing continuing above 5' to right; good showing all through loose material; exposed walls badly weathered.
59.	Good showing on painted number; can't tell where channel was cut; also on both sides of sample and in loose material.
60.	Low grade at sample and on both sides.
61.	No showing except in loose material; showing 6' to left of 61 and 4' to right AND in loose material.
62.	No showing in cut; scheelite 4' to right and in loose material.
63.	(Pit) good showing on east side with spotted showing west and south side.
64.	(Pit) no showing.
65.	(Pit) Good on west side and loose material in between. No showing on south or east side; badly weathered.
66.	(Pit) no showing.
67.	(Pit) Slight showing in sample cut; slight showing in place in between and loose material.

Sample No.	Comment
68.	(Pit) Slight showing in floor and walls but not where sample was cut; low grade.
69.	(Pit) No showing except in loose material - very little.
70.	(Pit) showing low grade streaks with one good grade spot on east wall showing low grade in loose material.
71.	Some slight showing in channel cut. High grade showing few inches south; good showing north; broken ore arouns; good mill feed.
72.	No showing; slight 1' north of 72 and in loose material all around but none showing in chip marks of channel. Good body of broken mill are.

The above information, remarks and data will be carefully spotted on a map, but in order to accurately do this it will be necessary to again visit the property and take accurate measurements.

You will note that I have prepared this information and there can be no question of the value of our deposit of scheelite and the importance of this deposit to our nation at this time.

It should well be noted that this information has been prepared well in advance of us having any information of the assay reports from the Reno office of the United States Bureau of Mines or from Mr. Paul C. Bateman's report to the D.M.A., and I call your attention to this information and the fact that perhaps it may be well to send it on to the D.M.A. in Washington.

Respectfully submitted and

Very truly yours,

Robert F. Dore

Robert F. Dore, President

RFD:ns

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
APR 12 1951
SAN FRANCISCO, CALIFORNIA

102 Old Mint Building
San Francisco 3, California

April 11, 1951

Refer to	Noted	Date
	HCM	4/12
Answered		

Mr. E. J. Matson
U. S. Bureau of Mines
P. O. Box 1551
Reno, Nevada

Dear Ed:

Enclosed are two photostats of our map of the Princess Pat prospect, a colored and an uncolored copy. I will send you a copy of the drafted map when it is completed in a week or so, but the photostat should serve for now. Probably we will also prepare a separate map as a base for showing the sampling, but we haven't decided yet on the layout for it.

The docket on the Princess Pat Mining Corporation arrived this morning. We will be much interested in seeing the assay results.

Sincerely yours,

Paul C. Bateman, Geologist
Mineral Deposits Branch

CC: H. C. Miller - U. S. Bureau of Mines

Mining Division
Region III

Nevada - California

P. O. Box 1551
Reno, Nevada

April 2, 1951

Mr. Robert F. Dore, Pres.,
Princess Pat Mining Corporation,
257 So. Spring Street,
Los Angeles 12, Calif.

Dear Mr. Dore:

Replying to your letter of March 29, addressed to Mr. E. J. Matson, requesting a portion of the pulp of the samples taken by Mr. Matson on your tungsten property.

I am sorry that we cannot comply with your request to make a portion of the pulp available to you. The analyses that are given us by the Metallurgical Division on this pulp will be included in Mr. Matson's and Mr. Bateman's report on your property to the Defense Minerals Administration.

I want to thank you for making available to Mr. Matson, a summary of your budget as set forth in your application for a loan to the Defense Minerals Administration.

Very truly yours,

A. C. Johnson, Chief
Mining Division
Region III

REGIONAL DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF MINES
1415 U. S. APPRAISERS BLDG.,
630 SANSOME STREET,
SAN FRANCISCO 11, CALIF.

March 27, 1951

Memorandum

To: A. C. Johnson - Reno

From: Regional Director, Region III

Subject: Princess Pat Application (Tungsten)--DMA-365

Recent correspondence with the subject docket number is attached. Kindly attach it to the original file, if that file is in your office. If not, return the correspondence when it has served your purpose.

H. C. Miller
Regional Director, Region III

Attachments 3

J. B. Zadra

E. J. Matson

Princess Pat - DMA

March 26, 1951

Sample No.	Width
1	3.3
2	3.8
3	6.0
4	3.9
5	2.4
6	3.5
7	2.0
8	2.5
9	3.0
10	2.5
11	2.5
12	3.2
13	2.8
14	5.0
15	4.7
16	4.9
17	4.4
18	3.8
19	4.2
20	3.7
21	2.8
22	3.3
23	4.0
24	3.2
25	4.2
26	3.0
27	3.5
28 28	3.7
29	4.0
30	3.0
31	3.2
32	5.3
33	4.8
34	3.4
35	2.6
36	3.9
37	5.0
38	5.0
39	4.6
40	4.0
41	3.0
42	3.3
43	7.5

Sample No.	Width
44	7.0
45	5.5
46	7.5
46A	7.5
47	10.0 @ 45°
47A	9.0 @ 45°
48	10.0 @ 45°
48A	7.0 @ 45°
49	4.0 @ 45°
50	6.0 @ 45°
51	3.5
52	4.0
53	3.5
54	3.3
55	3.0
56	3.5
57	3.3
58	3.2
59	2.6
60	3.0
61	3.8
62	2.3
63	5.5
64	3.6
66	3.3
67	3.6
68	3.6
69	2.5
70	3.2
71	3.0
72	3.2
65	1.7

Please assay for WO_3 and Mo.

E. J. Matson

cc A. C. Johnson
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
RARE AND PRECIOUS METALS EXPERIMENT STATION

METALLURGICAL DIVISION — Hydrometallurgical and Ore-Dressing Branch, Box D, University Station — RENO, NEVADA

Region III

April 17, 1951

Mr. E. J. Matson
Bureau of Mines
Box 1551
Reno, Nevada

Project No. Matson

D.M.A.
Princess Pat

Sample No.	%,WO_3	Sample No.	%,WO_3	Sample No.	%,WO_3	%,Mo
1	0.04	25	0.01	47A	0.17	0.04
2	0.02	26	0.02	48	0.46	
3	0.06	27	0.02	49	0.10	
4	0.02	28	*0.01	50	0.02	
5	0.02	29	0.06	51	0.02	
6	0.02	30	0.57	52	0.38	0.04
7	0.26	31	0.27	53	1.04	0.06
8	0.03	32	*0.01	54	0.01	
9	0.02	33	*0.01	55	0.18	
10	0.02	34	0.01	56	0.21	
11	0.21	35	*0.01	57	*0.01	
12	0.04	36	0.15	58	0.18	
13	0.03	37	*0.01	59	0.02	
14	0.03	38	0.07	60	*0.01	
15	0.35	39	0.23	61	0.01	
16	0.07	40	0.13	62	0.02	
17	0.06	41	0.04	63	0.01	
18	0.02	42	0.09	64	0.02	
19	0.02	43	0.28	65	0.02	
20	0.03	44	0.23	66	0.02	
21	0.01	45	0.39	67	0.02	
22	*0.01	46	0.38	68	0.01	
23	0.14	47	0.37	69	0.04	
24	*0.01	46-A	0.06	70	0.01	

Sample No.	%,Mo
29	0.02
44	0.04
45	0.03

Sample No.	%,WO_3
71	0.02
72	0.01

* less than

cc: A. C. Johnson

J. B. Zadra
Supervising Engineer

OFFICE: ROOM 442
257 SO. SPRING ST.
LOS ANGELES 12, CALIF.

HARRY LEE MARTIN
VICE-PRES. & SEC'Y
TEL. MA. 6-7846

MINING PROPERTY
NEAR ADELANTO, CALIF.

Princess Pat Mining Corporation

29 March, 1951.

Mr. E. J. Matson,
U. S. Bureau of Mines,
P.O.Box 1551,
Reno, Nevada.

Dear Mr. Matson:

I write to express my appreciation of your courtesy in according me the lengthy interview which you did at the Green Spot Motel in Victorville at which time we discussed, among other things, a report made by me as of November, 1948, in regard to the proposed mine operation which is now pending of the Princess Pat Mining Corporation, and also in some detail the Pneufloat Dry Concentrator which will perform a major function in the preparation of the primary concentrates at the mining property near Shadow Mountain. In order that you may have, in convenient form, a summary of our budget as set forth in our Application for a loan to the Defense Minerals Administration, marked Docket No. 365 in their file, I enclose a typewritten copy of said summary, for your files and information.

On 28 March, 1951, I had a telephone conversation with Mr. Paul C. Bateman, who at that time was in Los Angeles, and expressed to him my desire that we have an Assayer's pulp sample of the ore samples which you cut at our mining property; and Mr. Bateman advised me that I should present our request for the pulp samples to you, which we hereby do.

We request that you advise the Assayer in Reno who assays the samples, to cut a pulp of each, and ship same by parcel post or express to us at our above address. We will pay the transportation charges promptly upon advice as to the amount, or the samples may be shipped to us C.O.D.

Hoping that this communication and the enclosure reaches you promptly, and that it will be permissible for us to receive the pulps as requested, I remain,

Very sincerely yours,

Robert T. Dore
President

Enclosure

PRINCESS PAT MINING CORPORATION Jan. 2,1951

ESTIMATED COSTS OF PLANTS AND EQUIPMENT TO EFFECT SCHEDULED PRODUCTION
PLUS WORKING CAPITAL REQUIRED

	Quarry Equipment	Plant No. 1	Plant No.2	Land & Water Supply	Buildings	Trucks Etc.	Power Line	Working Capital & Supplies
Calif.Electric Power Co.							$80,000.00	
Jaw Crusher #1		6825.00						
Symons Cone #2		11500.00						
Power Shovel 1½ yd.	45,000.00							
Trucks & Vehicles						39,000,00		
Plate Feed #2 Crusher		1500.00						
Dryer - Rotary		4840.00						
Elevator to Bin		1000.00						
Storage Bin		10000.00						
2 - Grinding Mills		35000.00						
2 - Elevators to Feed Bins		2000.00						
2 - Feed Bins		18000.00						
2 - Feeders to Concentrators		2370.00						
10- Concentrators		20000.00						
1 - Conveyor to Con. Bin		1000.00						
1 - Conveyor to Tailings		2000.00						
1 - Concentrate Bin		2500.00						
Fuel and Water Tanks		1000.00	2000.00					
Drills & Equipment	22,000.00							
6 - Wet Tables			3900.00					
Vibrating Screen		1500.00						
Magnetic Separator			6500.00					
Electric Motors							7,246.00	
Transformers		1000.00						
Water Plant			500.00					
Wet Mixer			1600.00					
Sutorbilt Equipment		11000.00						
Fiedler-Dryer & Roaster			1885.00					
Fiedler Cooling Unit			1020.00					
Mill Site #2 - 30 acres				5000.00				
Well Pump and Pipe				5000.00				
Vibrators			320.00					
3 - Automatic Samplers		1500.00						
10,000 sq.ft. Bldgs. @ $5					50000.00			
Tools,Pipe & Fittings	3,000.00	4000.00	2000.00					
Installation		14930.00	3564.00			39,000.00	87,246.00	
Working Capital (4 Mo. operation and Supplies								$82,000.00
Sub-Total	70,000.00	153465.00	33239.00		50000.00	39000.00		82,000.00

ontingent Fund for rice Change & Error	5,931.95	11613.11	2518.79	4237.05	3304.80	7,394.30		
	75,931.95	165078.11	35807.79	54237.05	42304.80	94,640.30	82,000.00	$550,000.00

J. B. Zadra

E. J. Matson

Princess Pat - DMA

March 26, 1951

Sample No.	Width
1	3.3
2	3.8
3	6.0
4	3.9
5	2.4
6	3.5
7	2.0
8	2.5
9	3.0
10	2.5
11	2.5
12	3.2
13	2.8
14	5.0
15	4.7
16	4.9
17	4.4
18	3.8
19	4.2
20	3.7
21	2.8
22	3.3
23	4.0
24	3.2
25	4.2
26	3.0
27	3.5
28 28	3.7
29	4.0
30	3.0
31	3.2
32	5.3
33	4.8
34	3.4
35	2.6
36	3.9
37	5.0
38	5.0
39	4.6
40	4.0
41	3.0
42	3.3
43	7.5

Sample No.	Width
44	7.0
45	5.5
46	7.5
46A	7.5
47	10.0 @ 45°
47A	9.0 @ 45°
48	10.0 @ 45°
[redacted]	[redacted]
49	4.0 @ 45°
50	6.0 @ 45°
51	3.5
52	4.0
53	3.5
54	3.3
55	3.0
56	3.5
57	3.3
58	3.2
59	2.6
60	3.0
61	3.8
62	2.3
63	5.5
64	3.6
66	3.3
67	3.6
68	3.6
69	2.5
70	3.2
71	3.0
72	3.2
65	1.7

Please assay for WO_3 and Mo.

cc A. C. Johnson
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
RARE AND PRECIOUS METALS EXPERIMENT STATION

METALLURGICAL DIVISION

Hydrometallurgical and Ore-Dressing Branch
Box D, University Station

RENO, NEVADA

Region III

April 17, 1951

Mr. E. J. Matson
Bureau of Mines
Box 1551
Reno, Nevada

Project No. Matson

D.M.A.
Princess Pat

Sample No.	%,WO_3	Sample No.	%,WO_3	Sample No.	%,WO_3		
1	0.04	25	0.01	47A	0.17	%,Mo	
2	0.02	26	0.02	48	0.46	0.04	
3	0.06	27	0.02	49	0.10		
4	0.02	28	*0.01	50	0.02		
5	0.02	29	%,Mo 0.06	51	0.02		
6	0.02	30	0.02 0.57	52	0.38	0.04	
7	0.26	31	0.27	53	1.04	0.06	
8	0.03	32	*0.01	54	0.01		
9	0.02	33	*0.01	55	0.18	Sample No.	%,WO_3
10	0.02	34	0.01	56	0.21		
11	0.21	35	*0.01	57	*0.01	71	0.02
12	0.04	36	0.15	58	0.18	72	0.01
13	0.03	37	*0.01	59	0.02		
14	0.03	38	0.07	60	*0.01		
15	0.35	39	0.23	61	0.01		
16	0.07	40	0.13	62	0.02		
17	0.06	41	0.04	63	0.01		
18	0.02	42	0.09	64	0.02		
19	0.02	43	0.28	65	0.02		
20	0.03	44	%,Mo 0.23	66	0.02		
21	0.01	45	0.04 0.39	67	0.02		
22	*0.01	46	0.03 0.38	68	0.01		
23	0.14	47	0.37	69	0.04		
24	*0.01	46-A	0.06	70	0.01		

* less than

J. B. Zadra
Supervising Engineer

cc: A. C. Johnson

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

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
MAR 19 1951
SAN FRANCISCO, CALIFORNIA

Refer to	Noted	Date
	Hall	3/19
Answered		

March 13, 1951

Mr. H. C. Miller, Executive Officer
D.M.A. Field Team, Region III
1415 Appraisers Building
San Francisco, California

DMA 365

Dear Mr. Miller:

We enclose herewith copies of recent correspondence pertaining to the subject docket number, which you will find self-explanatory in providing you with additional information for your field follow-up. Will you kindly attach it to the original file which is presumably now in your possession.

Very truly yours,

P. R. Bradley

P. R. Bradley, Jr.
Chief, Manganese Branch

Extra copy of this correspondence given to Miss Sec'y 3/20

REGIONAL DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF MINES
1415 U. S. APPRAISERS BLDG.,
630 SANSOME STREET,
SAN FRANCISCO 11, CALIF.

March 9, 1951

Memorandum

To: A. C. Johnson - Reno

From: Regional Director, Region III

Subject: Princess Pat Mining Corp. - DMA-365

Region III DMA Field Team has been requested to make a field examination of subject property (also known as Just Associates Property) in the north end of the Shadow Mountains near Adelanto, California. The nearest big town is Victorville. This is a tungsten property on which reports by Julian Boyd (Jim's father) and Walter S. Clute do not agree.

The work will include a comprehensive sampling job, and it may be advisable to take one of your light trucks to the location to bring back the many samples that will be taken.

Paul Bateman, of the Survey, is going to the property and is to start work on a map of it on or about March 14. His geological map will be the basis for your engineer's sampling. Mr. Bateman is taking the DMA file with him, so that your engineer can examine it when he gets there.

On or about March 16, Mr. Bateman will telephone you and tell you when he will be ready for your engineer to start his sampling. At the same time he will tell you where he will meet your engineer when he arrives at Victorville.

H. C. Miller
Regional Director, Region III

Copy to: Ward Smith, Geological Survey

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

February 23, 1951

Memorandum

To: Executive Officer, Field Team, Region II
1415 Appraisers Building, San Francisco, Calif.

Thru: Operating Committee

From: Tungsten Commodity Committee

Subject: DMA-365 - Princess Pat Mining Corp.

The Princess Pat Mining Corporation has applied for a loan of $550,000 to equip and operate a tungsten prospect leased from Just Associates and located in the Shadow Mountains, San Bernardino County, California (DMA-365).

The applicant has submitted reports by Walker S. Clute (1949) and by Julian Boyd (1950) to support the feasibility of the project. These reports do not agree with regard to content of WO_3 in the ore, Mr. Clute estimating 0.35 percent, Mr. Boyd 0.68 percent. Information obtained in 1942 by the Geological Survey and Bureau of Mines, gained from a brief field examination by W. M. Traver and D. M. Lemmon, suggests that the rock in place might contain only 0.15 to 0.2 percent of WO_3. The mineralization is confined to many thin layers o.5 to 2.5 feet thick separated by barren layers 3 to 6 feet thick. A pilot mill built in 1938 by Tungstore Mines recovered about 0.3 units of WO_3 per ton. A grab sample of the tailing from this mill assayed 0.15 percent of WO_3, suggesting that the mill heads were 0.45 percent.

It is requested that the field team arrange for an examination of the deposit to check the applicant's statement of ore reserves. Thorough sampling of a large surface area may be required. The problem appears to require that we learn not only the content of WO_3 in the entire mass, but the content in material that can be sorted or mined selectively. A choice between wholesale mining and selective mining may be very important. If further exploration is required, your recommendations should be made as to kind and cost.

Your recommendation is also requested in respect to the operating procedure for recovery of tungsten from this deposit. The applicant's proposal for milling the ore should be appraised with regard to suitability of process, recovery, and cost. Will the concentrates meet specifications with regard to impurities, especially molybdenum? Any other information which you consider pertinent should be given us.

Copies of the following documents submitted with the application DMA-365, Princess Pat Mining Corporation, are being forwarded under separate cover.

Letter of Transmittal
Application for Loan
Exhibit B - Report of Julian Boyd
Exhibit C - Report of Walker S. Clute
Exhibit D - Certified Copy of Resolution
Exhibit E - Flow Sheet, Primary Concentrating Plant
Exhibit F - Flow Sheet, Secondary Concentrating Plant

P. R. Bradley

P. R. Bradley, Jr.,
Chairman, Tungsten Commodity Committee

Approved:

C. O. Mittendorf
Acting Chairman, Operating Committee

Lowell B. Moon
Lowell B. Moon

Olaf N. Rove
Olaf N. Rove

Refer to	Noted	Date
Answered		

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
So. 157 Howard Street
Spokane, Washington

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
MAR 8 1951
SAN FRANCISCO, CALIFORNIA

March 6, 1951

MEMORANDUM

To : Mr. H. C. Miller, Executive Officer, Field Team, Region III
1415 Appraisers Building, San Francisco, California
From : A. E. Weissenborn, Executive Officer, Field Team, Region II
So. 157 Howard Street, Spokane, Washington
Subject: DMA-365 - Princess Pat Mining Corporation

Enclosed you will find the following in connection with the subject docket:

- Memo dated February 23, 1951, to Executive Officer, Field Team, Region II, from Tungsten Commodity Committee (original and 2 copies)
- Carbon copy of letter dated February 23, 1951, to Robert F. Dores from Tom Lyon
- Letter dated February 5, 1951, to Philip R. Bradley, Jr. from Julian Boyd
- Excerpt from letter dated January 19, 1951, on Julian Boyd letterhead to "Jimmy"
- Letter dated January 5, 1951, to James Boyd from Robert F. Dore
- Application for Government loan
- Map of California showing major rock units and their significance to exploration for tungsten deposits (Exhibit A)
- Report on Princes Pat Mining Corporation (Exhibit B)
- Report of Tungsten Properties of Robert F. Dore (Exhibit C)
- Copy of Resolution (Exhibit D)
- Princess Pat Mining Corporation flow sheet of Tungsten Milling Plant (Exhibit E)
- Proposed flow sheet of Finishing Plant for Princess Pat Mining Corporation (Exhibit F)

Obviously the above material was sent to us by error.

Enclosures
cc: Tungsten Commodity Committee
Thru: Operating Committee

COPY

PRINCESS PAT MINING CORP.

23 February, 1951

Mr. Julian Boyd,
510 West 6th Street,
Los Angles, 14, California.

Dear Major:

Regarding the application of Princess Pat Mining Corporation for a loan to be employed immediately to produce a large quantity as well as a high quality of scheelite concentrates, and constitute a very important addition to the Nation's overall production of tungsten:

In rechecking the copy of our application to DMA, I am quite certain that the information in the application is most complete except that we did not include an analysis of the concentrates that will be produced, and I am most confident that, when our application is fully analyzed, favorable action will be had to bring out full scheduled production from this project.

We are well a ware (via the Press) that the U.S. Bureau of Mines and the DMA are fairly swamped with many large applications covering a wide range of important metals and minerals, all bunched up for consideration at some time.

Our application, no doubt is relatively small in amount in contrast to the capital loan requirements of many others, but from the best authentic information we have at hand our application could not, or rather most certainly should not, be considered small when compared in terms of quantity and quality of production of scheelite concentrates. If compared to any other single tungsten production or as to the percentage of increase in the overall tungsten production of the United States, it is not small.

In view of the above, I believe it is our duty to endeavor to assist those charged with examining and analyzing our application by submitting a brief summary of production that can easily be verified by our formal application, as follows:

ORE

240,000 tons of "FIRST ORE" containing 0.88% WO_3 is the block of ore estimated by you and our geologist, Walker S. Clute, as more than ample to justify a loan under Section 302 of the Defense Production Act of 1950- Bringing out a scheduled production of 500 tons per day, and will fully repay said loan in a very short period of time.

RECOVERY

One top of ore x 0.68% equals a WO_3 content of 13.60 pounds. Repeated research pilot operations have definitely proven that a dependable recovery well above 80% is quite practical for large scale operations..... However

our application and Engineers' reports are conservatively based on an estimated recovery of only 70%.

70% of 13.60 pounds equals 9.52 pounds of WO_3 recovered per ton of ore handled.

OPERATING SCHEDULE

500 tons of ore per day of an operating month of 26 days equals 13000 tons (@9.50 pounds of WO_3 per ton) resulting in the production of 133,760 pounds of WO_3 monthly, or an annual production of 742.52 tons of WO_3,

Comparison with total domestic production from January 1, 1940 to January 1, 1945:

Mr. Harold L. Ickes, stated, as Secretary of the Interior December, 1945, as quoted by Mr. John B. DeMills, Geologist and Senior Engineer of RFC in his book, titled "STRATEGIC MINERALS" "The prodigal harvest of minerals that we have reaped to win this war: 20,750 tons of tungsten, between January 1, 1940 and January 1, 1945...."

If we can take that quoted statement as authentic, the average annual production during that 4-year period was 5187.50 tons.

Our scheduled production, 742.50 tons of WO_3 per year, would represent about 14.31% or approximately one seventh of the annual peak production during that period.

RELATION OF CAPITAL LOAN TO ONE FULL YEAR'S SCHEDULED PRODUCTION OF TON UNITS OF WO_3

$550,000.00 divided by 74,256 units equals an initial capital requirement of $7.40 to produce one 20-pound unit of WO_3 in the first year of continuous operation, or an initial capital requirement of $740.00 to produce 1 ton of WO_3.

PUBLISHED MARKET QUOTATIONS

Los Angles Times, February 15, 1951: Domestic scheelite $65.00 per unit (20 pounds). $65.00 divided by $7.40 initial capital loan requirement to bring out scheduled production, shows the value of the first annual scheduled production to be approximately 7.78 times the required capital loan to bring out the production.

Our application suggests a repayment of the loan of 20% of the gross or 65% of the net after taxes, whichever is the greater...This would fully repay and fully retire the principal amount of the loan in about 6 and 2/3 months after full scheduled production is reached.

From the above it can readily be seen that, by bringing this project into full scheduled production, it is not only most important to materially increasing the overall National production of tungsten but is also a quickly self liquidating proposition.

There is one other point well worth considering, and that is the high quality of concentrates produced our this deposit.... From repeated assays and spectrographic analyses the following specification will closely

approximate the average concentates produced from our deposit.

ASSAY ANALYSIS

Tungsten Trioxide (WO_3) - - - - - - - - -	60% (70 to 75% if desired)
Copper (Cu) - - - - - - - - - - - - - - - -	0.03%
Molybdenum (Mo) - - - - - - - - - - - - - -	0.01%
Phosphorus (P)- - - - - - - - - - - - - - -	0.003%
Sulphur (S) - - - - - - - - - - - - - - - -	Trace

SPECTROGRAPHIC EXAMINATION (Qualitative)

Calcium, Tungsten, Silicon - - - - - - - Major Constituents

Aluminum, Iron - - - - - - - - - - - - - - Intermediate Constituents

		Minor Constituents
Sodium- - - - - - -	approximately	1%
Lead- - - - - - -	"	0.5%
Magnesium - - - -	"	0.5%
Manganese - - - -	"	0.1%
Copper - - - - -	"	0.05%
Zinc- - - - - - -	"	0.05%
Barium - - - - -	"	0.05%
Titanium - - - -	"	0.05%
Bismuth - - - - -	"	0.01%
Vanadium - - - -	"	0.005%
Strontium - - - -	"	0.005%
Molybdenum - - -	"	0.005%
Chromium - - - -	"	0.005%
Boron - - - - -	"	0.001%
Gallium - - - -	"	0.001%
Nickel - - - - -	"	Trace
Silver - - - - -	"	Present

The high quality of concentrates produced from our deposit could be used for blending with concentrates of substandard quality, and thereby make available more usable concentrates within the limits of unusual specification requirements.

If you concur with the information herein contained and think it will be helpful, we suggest you send the foregoing information to Washington.

Thanking you, we are,

Very truly yours,

PRINCESS PAT MINING CORPORATION,

By /s/ Robert F. Dore
President.

P. S. Since writing this my attention has been called to the current issue of Chemical and Engineering News, and note that "tungsten is a prime headache" and the required increase in production is 12,000,000

pounds per year". (6,000 tons)

Approximately 1,500,000 (750 tons) pounds can be obtained by bringing the Princess Pat property into production representing about 12½% of the requirement.

/s/ R.F.D.

PRINCESS PAT MINING CORP.
257 South Spring St.
Los Angeles 12

EXHIBIT D

"RESOLVED: That Robert F. Dore, Pesident of the Princess Pat Mining Corporation, and Harry Lee Martin, Secretary of said corporation, having been duly elected officers of said corporation to their respective positions, be and they are hereby authorized and directed:

"To apply, in the name of and on behalf of said corporation, for a Government loan under Section 302 of the Defense Production Act of 1950 on Form NSRB-146 (Nov. 1950), said form having been approved by the Budget Bureau under its No. 25-R002, in the amount of $550,000.00. The money so applied for to be used by this corporation to construct and operate a primary treatment plant on its mining property near Shadow Mountain in San Bernardino County, California, and now covered by a Mining Lease, the Lessee's interest in which has been duly assigned to said corporation, and also a secondary concentration plant near Victorville, California, all as will be set forth in detail in said application; and

"Said officers of said corporation are further hereby authorized and directed to execute, in the name of and on behalf of said corporation, in favor of the United States Government, or such agency of the United States Government as may act in the premises, an obligation in favor of the United States Government, or its said agency, evidencing the amount of the loan made in accordance with said application, together with all other documents pertinent to the matter which may be required, convenient or necessary; and

"Said officers are further and hereby authorized and directed to execute in favor of the United States Government, or its said agency, such and whatever documents or agreements as may be necessary or required to effect a pledge of whatever, and all, real property or personal property that may be acquired by said corporation with the proceeds of said loan, or otherwise, hereafter, as security for the repayment of said loan if required by the United States Government or its said agency; and that

"Said officers be further, and hereby, authorized and directed to do all things necessary, required or convenient within their power as such officers and in accordance with law, to effect the consummation of said loan, the construction of said plants, the operation of the mining property covered by said Lease and the repayment of said loan out of the proceeds and avails of the products of said mining property, all as may be provided and set forth in the said "Application for Government Loan" above referred to."

I, Harry Lee Martin, Secretary of Princess Pat Mining Corporation, do heregy certify that the foregoing Resolution was duly had at a regular meeting of the Board of Directors of said corporation held on

January 2, 1951, at which meeting a quorum was present, and that a majority of the directors of said corporation voted in favor of the adoption of said Resolution.

I also hereby certify that Robert F. Dore is the duly elected president and Harry Lee Martin is the duly elected secretary of said corporation, that the terms of office to which they were elected have not expired and that they are qualified and active officers of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said corporation this 5th day of January, 1951 at Los Angeles, California.

SEAL

/s/ Harry Lee Martin

Mining Property
near Adelanto, Calif.

C O P Y

Office: Room 442
257 So. Spring St.
Los Angeles 12, Calif.

Harry Lee Martin
Vice-Pres. & Sec'y
Tel. MA. 6-7846

PRINCESS PAT MINING CORPORATION

5 January, 1951.

Dr. James Boyd, Director,
Bureau of Mines,
Washington 25, D.C.

Dear Sir:

In conformity with written advice, with enclosures, received from Mr. S. H. Williston, Chairman of Operating Committee, we hand you herewith our application for a Government loan under Section 302 of the Defense Production Act of 1950. The date of our application is January 5, 1951. The amount applied for is $550,000.00. The terms of the loan requested are that the same shall be repaid out of 20% of the receipts of our gross production of tungsten concentrates conforming to Government specifications, monthly as received, and further, that the amount we pay, in repayment of the loan in each calendar year, shall be not less than 65% of our net profit from operations after allowance for taxes, income taxes, depreciation and depletion.

In our opinion, the loan should be for a maximum period of ten years, but we firmly believe that we will be able to effect its repayment within five years from its date.

The terms of the loan should provide (if the same bears interest) that interest shall accrue but the payment thereof be not required until six months after the plant goes on production, or within one year from the date of the loan, whichever date is the earlier.

We hand you herewith an official map of the State of California showing the location of known tungsten deposits, and the one marked "#107" is the location of our deposit.

We also hand you herewith report of our Consulting Engineer, Julian Boyd, and a report on the deposit, with general reference to the treatment that will be given to the ore mined and very conservative estimates of recovery, costs of operation and margin of profit, by our geologist, Walker S. Clute, to which reference is hereby made. A perusal of said engineering reports will clearly show that the estimates of costs of operation are carefully made, with liveral allowance for error; the estimates of average mineral content of the ore which is minable, are also conservative, and the margin of profit that is clearly evidenced is conservatively estimated, but is nevertheless ample not only to justify the loan applied for but to effect its repayment in a comparatively short time.

We also enclose a certified copy of the Resolution adopted by our Directors authorizing the officers of the corporation to apply for said loan.

We also enclose a schematic flow sheet of our treatment plant for producing primary concentrates, prepared by our Engineer of Design, J. J. Jessup, M.E., and separately a flow sheet of our secondary (or finishing) concentration plant, prepared by our Geologist, W. S. Clute M. E., who is also an experienced and well informed Mining Engineer.

The amount of the loan applied for (550,000.00) is based on our carefully prepared estimates of cost of construction and amount of working capital necessary to cover the period which we expect will elapse between the date of our first shipment (car load) of concentrates and the date when we will receive, in cash, the remittances for same from our expected largest, if not exclusive, customer the Government Stockpile.

We expect to have our plants completed and go on production within six months after the funds applied for are made available. This expectation is based on the prospect of our being able to secure the right to issue "DO" orders for the material, machinery and other equipment that we may need, so please consider that we automatically apply for such privilege if the loan applied for is granted.

We likewise expect that our first month's operation will result in an output equal to a half month's regular operation, because of the necessity of intermittent operation to allow time for making the necessary adjustments of pulleys, motors, etc., in order to effect complete synchronization of each process involved, crushing, re-crushing, drying, and primary concentration in our primary concentrating plant; and the synchronization and adjustment of the flow sheet in our secondary concentrating plant.

We expect to make our first car load shipment of finished concentrates, therefore, about 60 days after we go on production, and our best advice so far received is to the effect that we shall count on a period of 60 days elapsing between the date of our first shipment and the date of our receiving cash returns for same. We therefore conclude that our working capital will have to be not less than sufficient to handle the minimum of four months operation prior to receiving cash returns. You will observe by examining the schedule set forth in the report of Walker S. Clute, accompanying this Application, that our operating cost per month is more than $20,000.00, and for this reason we conclude that the working capital necessary is the amount applied for, to-wit: $82,000.00.

We trust that our Application is in order and the information supplied is sufficient to enable you to give it proper consideration, and believing that the National exigencies of the moment fully justify us in believing that your immediate and favorable consideration of our said Application, and the putting on production of our plants and tungsten deposit within the shortest possible time, will be distinctly and positively in the National interest, and directly serve and further the National Defense Program, we remain,

Very truly yours,

PRINCESS PAT MINING CORPORATION,

By /s/ Robert F. Dore
Presient.

Enclosures:

Exhibit A Tungsten Map of California
Exhibit B Report of Julian Boyd
Exhibit C Report of Walker S. Clute
Exhibit D Certified copy of Resolution
Exhibit E Flow Sheet, Primary Concentrating Plant
Exhibit F Flow Sheet, Secondary Concentrating Plant

Office: Room 442
257 So. Spring
Los Angeles 12, Calif.

Mining Property
near Adelanto, Calif.

Harry Lee Martin PRINCESS PAT MINING CORPORATION
Vice-Pres. & Sec'y
Tel. MA. 6-7846

5 March, 1951.

Subject DMA-365

Mr. H. C. Miller, Executive Officer,
San Francisco field team,
Defense Minerals Administration,
306 Custom House, 555 Battery Street,
San Francisco 11, California.

Dear Sir:

We have received today a letter from Mr. Tom Lyon, Acting Director Supply Division, Defense Minerals Administration, a copy of which we enclose and which is self-explanatory. Mr. Lyons' letter was not received until today.

This communication is to advise you that we await with interest a visit of your field team, and to advise you as to how the team can make contact with us: Our office address is Room 442, No. 257 South Spring Street, Los Angeles 12, California. The business telephone is MAdison 6-7846. The residence telephone of the writer is RIchmond 7-5780.

The property to be examined ban be conveniently reached by auto from Los Angeles, the location being about 2½ hours drive from this city.

In Los Angeles also you will have an opportunity to observe the mechanical means by which we expect to prepare our primary concentrate. The secondary, or finished, concentrate will be prepared by treating the dry primary concentrates by means of the usual wet process, using water as a suspensory medium, and cleaning the concentrates by use of a magnetic separator.

Well known assay laboratories are in Los Angeles, if you should desire to use them.

Awaiting the arrival of your field team, we remain,

Very truly yours,

PRINCESS PAT MINING CORPORATION,

By /s/ Robert F. Dore
President.

Enclosure

COPY from copy

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

February 23, 1951

Subject: DMA-365

Mr. Robert F. Dore, President
Princess Pat Mining Corporation
257 South Spring Street
Los Angeles 12, California

Dear Mr. Dore:

Your application for a loan (DMA docket 365) has been referred to the San Francisco field team with the request that an examination be made of your property in the Shadow Mountains, San Bernardino County, California.

We have asked that the field team investigate the content of WO_3 in the mineralized rock in order to substantiate or disprove the statement of your engineers that the average content if 0.35 percent (Clute) or 0.68 percent (Boyd). Inquiry will also be made into ore reserves, costs of production, and purity of concentrates, particularly with regard to molybdenum content.

Yours truly,

TOM LYON (signed)

Acting Director
Supply Division

COPY

2516 Hollyridge Drive
Hollywood 28, California

JULIAN BOYD
Consulting Mining Engineer
510 West Sixth Street
Los Angeles 14, California

February 5, 1951

Mr. Philip R. Bradley, Jr.
Washington Hotel
Pennsylvania Ave. at 15th St.
Washington, D. C.

Dear Mr. Bradley:

Re Princess Pat Tungsten Property

I have been informed from Washington, that you would like to have my view as to the ore reserve situation on this property in contrast to that of the USGS.

First let me state that I have made very careful inquiries about a USGS survey on this property, and have not been able to find any report. All the people that have been connected with this property since the original discovery have been contacted, and none of these have any knowledge of any USGS survey having been made of this property, or any engineers having been on the property for the purpose of making a report.

There may be, possibly a USGS report on the opposite side of Shadow Mountain, six miles by air and 23 miles by road from the Princess Pat. Such a report was probably made on account of two loans made by the RFC in the early 1940's, to people prospecting for tungsten on the south slope of Shadow Mountain, where the geological conditions are entirely different.

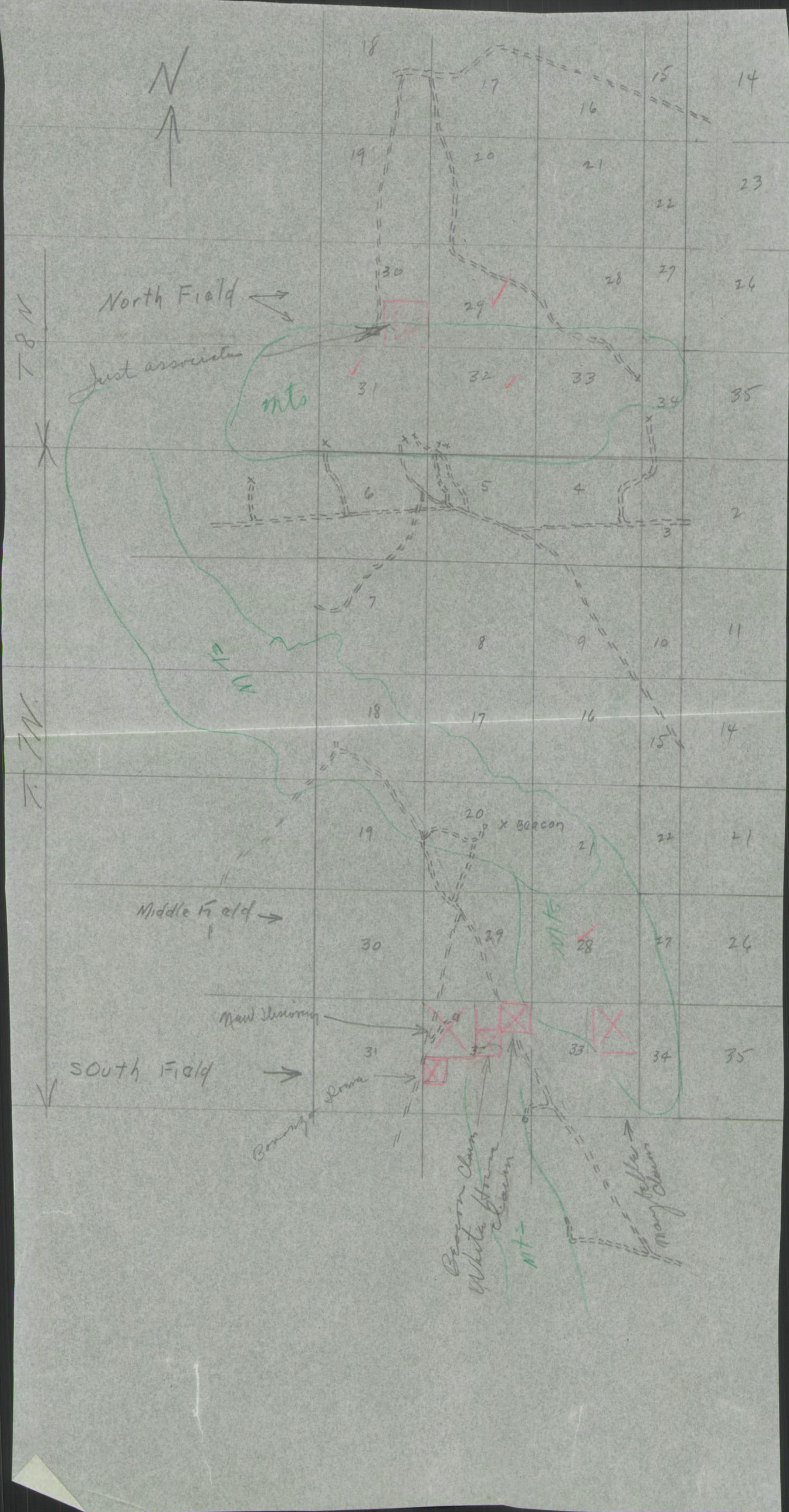
I was very careful in my estimation of the ore reserves of the Princess Pat, and only estimated the amount of the ore immediately available for mining by quarrying, and to keep going a mill until a loan for the erection of a mill was repayed. I estimated a tonnage of such "first" ore as 240,000 tons of an average grade of 0.68%WO_3, for ore supply to a plant of 500 tons a day capacity. This grade of ore with the output from such a plant would repay a loan of $550,000 in six months. The estimate of working cost and profit have been very carefully made, and can be found in my report.

I will be much obliged if you will study the application and reports very carefully, and let me know as soon as possible, if there is anything lacking; and if so, I will be glad to furnish the data required.

Trusting that, in view of the extreme shortage of tungsten at the present time, that the consideration of the application will be expedited,

Yours sincerely,
/s/ Julian Boyd

JB:j
cc: Dr. James Boyd.


N
North Field
Just associates
mts
T 8 N
T 7 N
X Beacon
Middle Field
New Housing
South Field
Bonnie Dam
Green Dam
White Storm Lake
Big Stone Lake

PRINCESS PAT
MINING CORPORATION
JUST ASSOCIATES
5 MILES