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Refer to	Noted	Date
	Hell	9/19
Answered		

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

SEP 14 1951

Memorandum

To: Production Expansion Division

Through: Director, Supply Division

From: Chrome Branch

Subject: TA-205 and 717 (Chrome) TA-2774 - Necessity Certificate
Dorothea Reddy Moroney
Klamath River, California

We are enclosing two copies of the subject application for a necessity certificate, together with four copies of our report and recommendations.

The application for a necessity certificate was filed together with an application for a purchase order and a loan to finance the project. The loan was denied and it is presumed there is no need for a necessity certificate.

George B. Holderer
Chief, Chrome Branch

Attachment

Approved:

Copy to Bailey 9/19

Tom Lyon

Director, Supply Division

TJBallard:ec
Sept. 14, 1951

CC: Adm. Reading File
DMA Docket File
Mr. Holderer
Field Team Region III

April 19, 1951

Memorandum

To: P. R. Bradley, Chairman, Chrome Committee,
Defense Minerals Administration, Washington 25, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: DMA-605—Dorothea Reddy Moroney—Klamath River, Calif.
Application for Government loan and purchase contract,
chrome ore and concentrates

Reference is to your letter dated April 3, requesting me to furnish you with certain information regarding the proposal by Mrs. Moroney to establish and operate a 50-ton mill for chrome ore from specific deposits in the Seiad, California, area.

Mr. Ricker and Mr. Doerner have given studied consideration to Mrs. Moroney's proposal and to the different points you brought up in your letter. Mr. Ricker has prepared a memorandum to me covering the results of their combined study and the original of his memorandum to me, dated April 19, is attached.

We trust that the information given in the memorandum will fill your purpose, but if not or if other information is desired, kindly communicate with us again.

Documents sent to me attached to your April 3 memorandum are returned herewith. I am still holding the application prepared by Mrs. Moroney, which you left with me on one of your trips to San Francisco. I note that this copy is No. 4 of five copies filed with DMA. Kindly let me know if you want us to return this copy to you.

H. C. MILLER

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

Attachments (File)

Copy to: Ward C. Smith, Geological Survey

HCMiller:am

Files
Chrono

April 19, 1951

Memorandum

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

From: Assistant Regional Director, Region III

Subject: DMA 605 - Klamath River Chromite Project
(Letter pril 3, 1951, Coordinating Committee)

Upon studying metallurgical results obtained by Hamilton Beauchamp and Woodworth on the McGuffy Creek ores and those obtained by the Bureau of Mines on Seiad Creek, I am of the opinion that a mill could be designed to treat the Klamath River ores and obtain a 70 percent recovery in 48 percent Cr_2O_3 concentrates. Further metallurgical work or study would be required before a definite flow sheet could be designed or a guarantee made as to the above assumed results.

In endeavoring to express an opinion on the numerous questions under procedure, it must be borne in mind that there is not enough tonnage of 18 percent ore indicated under reserves to run a 100 ton mill three shifts for more than one year. If the mill heads are assumed to be 15 percent, there are enough reserves indicated to maintain milling operation for a three-year period. Sufficient additional ore reserves of 15 percent Cr_2O_3 content could be expected to be developed to maintain operation for an additional year or perhaps much longer.

If it is decided to erect a custom milling plant in the Klamath River area as a "guinea pig", ore purchases could be arranged immediately on decision to erect plant. In this manner a stockpile could be built during design and erection period of plant and final results of experiment could be determined at much earlier period than awaiting commencement of ore purchases until plant was erected. As noted later, delivery of ores would probably decrease appreciably during the three winter months.

Points brought up in letter of April 3 by Mr. Phil Bradley under the caption, "Procedure suggestions", are taken up in the order of request.

1. Any site on main Yreka-Happy Camp Highway between Scott Bar and Seiad Valley would be satisfactory in regards to transportation. A mill anywhere between these points would be readily accessible for the Seiad Valley, Klamath River, and Scott Valley areas. Before exact site is chosen, a study of physical features, storage facilities, leasing or purchase of site area, labor supplies and housing facilities should be concluded.

2. Cost of access road construction is based on an estimated 25 miles of new roads that would probably be required over a four-year operation period. This estimate includes the known distance of the roads required to the following mines:

Seiad deposits	2.0	miles
McCuffy Creek group	5.5	"
Fairview	3.5	"
Ladd	4.0	"
Total	15.0	"

In addition, 10 miles are estimated for additional properties that may be discovered or brought into production.

Cost per mile based roughly on estimates made by Forest Service for similar work in same district in 1942 plus 75 percent for increased costs at this time is $10,000.

Maintenance per mile per year would range from $300 to $1000. An average of $650 is used.

Road construction 25 miles		———	$250,000
Road maintenance 25 miles		4 years	65,000
		Total	$315,000

3. Operating season of nine months for mine should be a safe estimate, and sufficient ore could be supplied for continuous 12 month period per year mill operating period.

4. An estimate of mining and milling costs are on attached Exhibit "A", based on a 100 ton plant operating 24 hours per day over a four-year period. Each individual property that may be expected to produce will offer certain individual problems so an overall preliminary cost per ton of concentrates laid down at Yreka for general guidance is all that can be done without considerable field and metallurgical work.

5. Mr. Henry A. Doerner, Chief of the Metallurgical Division, Region III, U. S. Bureau of Mines, has no information that a 70 percent recovery in concentrates of 48 percent Cr_2O_3 grade has been demonstrated. In his opinion, however, based upon experience with similar chrome ores, a 70 percent recovery in concentrate of 48 percent Cr_2O_3 grade can be achieved by good milling practice.

6. Local labor from the small hamlets along the river could probably be used so it is doubtful if much housing for personnel will be required for either mines or mills. An estimate of $2000 per unit cost at mill should be sufficient to cover all housing at mill site. The $150,000 estimate for equipment at mines should cover mine housing required.

S. Ricker

Attachment

SRicker:rmjs

Chrono
Files

EXHIBIT "A"

PRELIMINARY COST ESTIMATE -- KLAMATH RIVER CHROMITE PROJECT

100 Ton Capacity Mill -- 4 Years Production Period

70% Recovery -- 48% Concentrates

Mill Heads $\%Cr_2O_3$	Ratio Concts	Ton Concts. per day	Cost per Ton: Mining Ore	Mining Concts	Equipment Ore	Equipment Concts	Milling Ore	Milling Concts	Trucking Ore	Trucking Concts	100 ton Mill Ore	100 ton Mill Concts	Supervision Ore	Supervision Concts	Access Road Ore	Access Road Concts	Truck Concts Ireka	Total Cost	Contin-gencies 10%	Max.* Cost Concts
10	6.88	14.7	$ 4.00	$27.52	$ 1.00	$6.88	$3.50	$24.08	$4.00	$27.52	$1.35	$9.29	$3.50	$24.08	$2.25	$15.48	$ 5.00	$139.85	$13.99	$ 153.84
[illegible]	4.57	21.8	5.00	22.85	1.00	4.57	3.50	16.00	4.00	18.28	1.35	6.17	3.50	16.00	2.25	10.28	5.00	99.15	9.92	109.07
20	3.44	29.1	7.00	24.08	1.00	3.44	3.50	12.04	4.00	13.76	1.35	4.64	3.50	12.04	2.25	7.74	5.00	82.74	8.27	91.01
25	2.74	37.5	10.00	27.40	1.00	2.74	3.50	9.59	4.00	10.96	1.35	3.70	3.50	9.59	2.25	6.17	5.00	75.15	7.52	82.67
30	2.29	43.6	15.00	34.35	1.00	2.29	3.50	8.02	4.00	9.16	1.35	3.09	3.50	8.02	2.25	5.15	5.00	75.08	7.51	82.59

Cost Details:

Access Roads 25 miles $10,000 per mile	$250,000
Maintenance 25 miles Rd. 4-year period $650 per mile per year	65,000
	$315,000
Concentrating Plant 100 tons at $2000 per unit	$200,000
Mine Plant - Two operations concurrently	$150,000

*No profit or royalty allowance in mining or milling costs per ton.
No interest included in amortization.

Note: Based on above cost data and various data on grade of ore reserves along the Klamath River and adjoining areas, a minimum grade on mill heads should be 15% Cr_2O_3 in order to obtain appreciable tonnage of concentrates.

OFFICE OF THE ADMINISTRATOR

Refer to	Noted	Date
Answered	[illegible]	4/13

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

WASHINGTON 25, D. C.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
APR 6 1951
SAN FRANCISCO, CALIFORNIA

April 3, 1951

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

Through: Coordinating Committee

Subject: DMA 605

Dear Mr. Miller:

On my last visit to San Francisco I discussed with you and Mr. Ricker some of the Chromite problems of the Seiad area, particularly with respect to a proposal by Mrs. D. R. Moroney to establish and operate a 50 ton mill for chrome ore from specific deposits in that area. At the time, I delivered to you a copy of her proposal. It is obvious that the proposal is not feasible under present policies. It does, however, raise the question of just what sort of mill, if any (assuming a probability of change in the chrome policies), would be most desirable and feasible for the district. The investigation work already done in the district by Federal Agencies both on ore reserves and on metallurgy should be sufficient to answer this question. There may be an ideal mill for the district.

If so, DMA 605 can be examined by comparison with such a mill. It could be possible to thus suggest changes in DMA 605 to eliminate the question of engineering feasibility and reduce the question to that of marketing product.

(1) Location: The ideal location will be in the "center of gravity" of the useful ore reserves. Certain reserves may or may not be useful. The degree to which a deposit should be taken into account in locating the mill will be a function of (a) its size and grade, (b) metallurgical behavior, and (c) its nearness to the proposed millsite.

Since the applicant does not count on milling the large Seiad orebody, both the location and flowsheet of her proposed mill may be improper, though the ore is said to make a poorer concentrate.

(2) Flowsheet: Test work previously done by the Bureau may cover the question of differences in recoverability of the various ores. Applicant's design omits consideration of Seiad ore. The question of milling the Yreka stockpile enters.

Data on seven tests by Hamilton-Beauchamp-Woodworth is presented in application 605, on samples of mill feed running 13.6% to 41.0% Cr_2O_3.

The average recovery is about 52%. The five tests made with 28 mesh grind plot a fairly regular curve (grade of feed vs. recovery) which the two 40 mesh tests seem to parallel with a curve of their own showing a better degree of recovery; but there is no sign from these curves that 70% recovery will be attained from 20% heads, both of which are expected by applicant. H-B-W should be questioned on this aspect, though the ore tested may not be typical of those to be fed the "ideal" mill. H-B-W and applicant have obtained reports of USBM metallurgy on the 38% material of the Yreka Stockpike and present the data. As is to be expected, high recovery of this material meant poor concentrate, and vice versa. The results, if projected for lower grade feed, would probably be poorer.

Applicant recently reports conferences with G.S.A. in respect to milling the Yreka Stockpile and the slim possibility represented might be taken into account.

Reserves

The reserves of the district are distributed in the mines shown on Plate 6 of Geological Survey Bull. 948-B about as follows:

Claim	Short Tons	Grade
Anniversary	5,500	5 percent Cr_2O_3
Emma Bell	2,000	10 ?
Seiad Creek	60,000	15
Ladd	2,500	
Fairview	1,500	8
Grand Falls, Grand Canyon	1,000)	
Cerro Colorado	9,000)	
Veta Chica	13,625)	18
Veta Grande	1,000)	
Mary Lou	375)	
Lady Gray	200)	

5000 tons

Mr. Frank Pollack claims there are about 15,000 tons of 20-25 percent ore in the dump of the Fairview mine. This should be checked, but otherwise no more information on reserves is needed.

Procedure requested

In addition to examination along the lines above, it is also suggested that a mining engineer study the district to determine:

1. The best location for a central custom mill of 100-150 tons daily capacity on a 3-shift basis.

2. Costs of necessary road construction and maintenance over a 4-year period.

3. Operating Season for the principal deposits.

4. Probable mining and hauling costs of ore and concentrates, with special attention to sorting mill ore from barren rock in banded deposits.

5. Bureau of Mines data on probable overall recovery and grade of probable concentrate.

6. Housing required, and mill cost.

Very truly yours,

P. R. Bradley

P. R. Bradley,
Chairman, Chrome Committee

Approved:

Tom Lyon

Chairman, Coordinating Committee

Lowell B. Moon

For the Bureau of Mines

Olaf P. Ross

For the Geological Survey