OUT

No. or Name	Taken By	Date Taken	No. or Name	Taken By	Date Taken	No. or Name	Taken By	Date Taken
~~2895~~	~~[illegible] 12/[illegible]~~							
~~4462~~	~~Razzu~~	~~5/22/58~~						
~~4926~~	~~6/20 [illegible]~~							
~~500~~	~~6/6 5000~~							
~~4291~~	~~700~~	~~3/10 (Bank 82)~~						
~~6234~~	~~Received 8/19/61~~							
~~4201~~	~~[illegible] 11/21~~							
~~4999~~	~~Received~~							
~~5023~~	~~2/26/63~~							
6274	500	2/27/63						
~~2746~~	~~500~~	~~5/10/63~~						
~~2404~~	~~500~~							
2405		5/29/63						
2406								

OUT

No. or Name	Taken By	Date Taken	No. or Name	Taken By	Date Taken	No. or Name	Taken By	Date Taken
3135	W Martin	10-20	3490	Grace Guest	12-6	3279	400	5/17
1625	W. Boddington	11-20	3606	700	12-15			
3066	E. Dames	12-7				2438	500	10/8
3119		12-17	3361	Lackhoff	12-20			
3003		12/21			1-16	Book 31		
3089	W. Boddington	12-30						
2644								
		1-19	Date adjusted to Rev. Payment	J.D. Trace				
2486	Grace Guest	1-20	8/10/55	3/30/55				
3044	E. Dames	1-27				61999	120	6/14
1498	W. Martin	2-25	3626		4-4			
2131	Bottomley	3-18						
3112	Lackhoff	4/11	438	Dodington	10-29			
1186	Alley	4-26						
			400	8-75	Murphy			
3149	R.W. Ellis	6-25		4766				
3405	700	6-30						
2923	Grace	7-15						
			3955	-8-68	400 WM	6/23		
	J. Fine							
3056	H. Nichols	12-9						
3237		11-9						

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

224 New Customhouse
Denver 2, Colorado

March 26, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: Code 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2364, E. A. Colburn, Jr., Congress Mine (Tungsten) Date Creek Mining District, Yavapai County, Arizona

Enclosed are the original and three copies of the final report on DMEA-2364, the original and one copy of DMA Form 3b, and a copy of the letter of denial to the applicant.

J. H. East, Jr.

A. H. Koschmann

Enclosures

Form 3b detached in U.S.D.
3/31/52 E.B.

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

Denver 2, Colorado

March 26, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: Code 710

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2364, E. A. Colburn, Jr., Congress Mine (Tungsten) Date Creek Mining District, Yavapai County, Arizona

Enclosed are the original and three copies of the final report on DMEA-2364, the original and one copy of DMA Form 3b, and a copy of the letter of denial to the applicant.

J. H. East, Jr.

A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAR 3 - 1952

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

224 New Customhouse
Denver 2, Colorado

March 26, 1952

Mr. E. A. Colburn, Jr.
P. O. Box 153
Congress, Arizona

Dear Mr. Colburn:

Your application, DMEA-2364, for exploration assistance on the Congress Mine has received careful consideration.

A field examination indicates that there is little possibility of making a significant discovery of tungsten on your property. We therefore regret to inform you that your application for aid is denied.

Very truly yours,

J. H. East

J. H. East, Jr.
Field Team, Region IV

cc: Acting Administrator

A. H. Koschmann

A. H. Koschmann
Field Team, Region IV

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DENVER
MAR 3 - 1952

Mining Division
Region IV

March 26, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA-2364, E. A. Colburn, Jr., Congress Mine, (Tungsten) Date Creek Mining District, Yavapai County, Arizona

Enclosed are nine copies of the Engineering Report by L. L. Farnham of the Bureau of Mines.

The Congress Mine was a large producer of gold and silver beginning in the early nineties. The presence of tungsten was claimed to have been detected in 1951.

The samples taken by the field team in different parts of the mine all failed to show the presence of tungsten by spectroscopic tests.

We concur in the recommendation of the examining engineers that the application be denied.

W. H. King
W. H. King

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1952

Reviewed by
DMEA OPERATING COMMITTEE
4-2-52
(JHB) (date)

MINING DIVISION
REGION IV

March 18, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Division, Region IV

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Final Report, DMEA Docket 2364, E. A. Colburn, Jr., Congress Mine (Tungsten), Date Creek Mining District, Yavapai County, Ariz.

Mining Division
Date Rec'd
MAR 24 1952
BUREAU OF MINES
Denver, Colorado

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations by J. N. Faick of the Geological Survey and L. L. Farnham of the Bureau of Mines, and the section on Engineering by Farnham for the above report.

The examining team recommends that the loan application be denied as they could find no tungsten in the old Congress Mine.

This report has my approval.

Brochure is enclosed.

Walter R. Storms

CC W. H. King (8)
C. A. Anderson
DMEA-2364
DF

WRStorms:frj

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

200 New Customhouse
Denver 2, Colorado

March 24, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2364, Congress Mine (E. A. Colburn, Jr.), Yavapai County, Arizona (Tungsten)

Enclosed are the original and 8 copies of the final geologic report by J. N. Faick of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be denied.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

March 19, 1952

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: A. F. Shride, Tucson, Arizona

Subject: Geologic Report, DMFA 2364, Congress Mine (E. A. Colburn, Jr.), Yavapai County, Arizona (Tungsten)

Enclosed are the original and 8 copies of the above report by J. N. Faick of the Geological Survey.

As tungsten could not be found, even by spectrographic analyses of carefully selected samples, it must be recommended that the application be denied.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 9

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-2364, E. A. Colburn, Jr., Congress Mine (Tungsten)

Date Creek Mining District

Yavapai County, Arizona

J. N. Faick, Geologist
U. S. Geological Survey

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

March 1952

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By J. N. Faick[1] and L. L. Farnham[2]

Early in 1952, E. A. Colburn, Jr., the present owner of the old and well known Congress gold mine, applied to the Defense Minerals Exploration Administration for an exploration loan amounting to $32,471.40. The application was docketed as DMEA-2364. The amount requested was to be used for the rehabilitation and sampling of certain portions of the old mine workings that had been reported to contain tungsten. The property was examined and sampled by the field team during the week of March 3, 1952.

Since its discovery in the early nineties the Congress mine has produced about $8,000,000 in gold and silver. The presence of tungsten in the Congress vein was not known or suspected until it was claimed to have been detected during the summer of 1951. At that time several haphazard selected samples, taken from the mine dumps, were reported to have a tungsten content that ranged from a few hundredths of one percent to a maximum of 0.43 percent WO_3.

The samples taken by the field team in different parts of the mine all failed to show the presence of tungsten by spectroscopic tests. It is presumed that faulty analytical methods were employed by the applicant's analyst and that in reality the Congress vein does not contain perceptible amounts of tungsten. Therefore, it is recommended that the application for the loan be denied.

1/ Geologist, U. S. Geological Survey
2/ Mining Engineer, U. S. Bureau of Mines

CONGRESS MINE
(E. A. COLBURN, JR.)
YAVAPAI COUNTY, ARIZONA
DMEA 2364

TUNGSTEN

Geology

By
John N. Faick
Geologist, U. S. Geological Survey

CONGRESS MINE
(E. A. COLBURN, JR.)
YAVAPAI COUNTY, ARIZONA
DMEA 2364

TUNGSTEN

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General Geology	1
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Conclusions and Recommendations	5

ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Underground Workings of Congress Mine	" " "

INTRODUCTION

An application for Government assistance in exploring for tungsten in the Congress gold mine, Yavapai County, Arizona, has been filed with the Defense Minerals Exploration Administration as Docket 2364. The application was made by Mr. E. A. Colburn, Box 153, Congress, Arizona, owner of the mineral rights of the Congress mine, and was received in the Tucson, Arizona office February 15, 1952. The mine was examined March 4 and 5, 1952 for the Defense Minerals Exploration Administration by L. L. Farnham, U. S. Bureau of Mines, and J. N. Faick, U. S. Geological Survey, who were accompanied by the applicant.

GENERAL GEOLOGY

The Congress mine, located 3 miles northeast of Congress Junction, has been described in some detail in two nearly identical publications[1/], both of which include brief descriptions of the geology. The mine is at an altitude of 3400 feet at the base of the eastern end of the Date Creek Mountains. This portion of the range consists essentially of coarse-grained biotite granite intruded by aplite, pegmatite and greenstone dikes. The latter are important to this discussion because these basic dikes are frequently closely associated with the gold ores of the district and are claimed by the applicant to contain appreciable amounts of tungsten. These dikes are of very fine-grained, dense, greenish-black rock and in appearance look somewhat like slightly altered basalt, but may be hornblendites or lamprophyres. For the purpose of this report they will be referred to as greenstones.

1/ Staunton, W. F., Ore Possibilities at the Congress Mine: Eng. and Min. Jour., Vol. 122, No. 20, pp. 769-771, Nov. 13, 1926.
Wilson, E. D., Cunningham, J. B., and Butler, G. M., Arizona Lode Gold Mines and Gold Mining: Univ. Ariz., Ariz. Bur. Mines Bull. 137, pp. 69-73, 1934.

The Congress mine (Fig. 2) property contains several gold-quartz veins of which the Congress, Niagara, and Queen of the Hills have been of particular economic importance, and have been developed by many miles of underground workings. About 700,000 tons of ore valued at $8,000,000 have been produced from these veins. The veins occur within fault fissures which strike generally westward and dip northward. The Congress vein strikes N. 60° - 80° W. and dips 20 to 25 degrees northward and occurs as a fissure filling in granite.

The vein filling consists of massive, grayish-white quartz together with irregular masses, bands, and disseminations of fine-grained pyrite. Galena is rare, no other common sulfides were observed. Very little free gold has been reported and this element occurs in very fine microscopic grains disseminated in the quartz vein in well defined shoots. Iron and manganese stains are apparent on rock in the dumps. Scattered erratically on the walls of the mine and on the rock of the dumps are thin films of white amorphous silica, probably hyalite, that fluoresce bright yellowish green under the ultraviolet light.

In the hanging wall of the Congress vein, and occupying the same fracture zone in the granite, a prominent greenstone dike, ranging from about 5 to 15 feet in thickness, is nearly everywhere present. In detail the structure along this composite vein-dike zone is complex and several periods of deformation, with movements parallel to the vein-dike structure, are indicated. The granite country rock and greenstone dike have been sheared, crumpled and broken in local areas where deformation has been strongest. Vein quartz has filled fractures and partially replaced the dike and granite, and in some areas this process has resulted in the formation of ore in the dike

and in the hanging wall of the dike; however, the main vein is confined to the footwall of the dike.

The principal ore shoot, now mined out, pitched to the northwest in the plane of the vein and closely coincided with the intersection of the Congress vein with a steep westerly dipping cross-vein known as the Granite vein. Both veins were mineralized near the intersection but the main ore shoot was confined to the Congress vein (Fig. 2) and had a strike length of about 1800 feet on the 650 level, the place of maximum width. The ore shoot decreased in size with depth but was mined without interruption to 3200 foot level on the plane of the vein, and a small shoot was mined about the 3750 foot level. The average thickness of vein was about 30 inches.

REPORTED OCCURRENCE OF TUNGSTEN

Although the Congress mine has been thoroughly exploited for gold ores, the occurrence of tungsten has not been reported prior to the application. No tungsten minerals such as scheelite, wolframite or huebnerite were recognized by the field examiners from the Defense Mineral Exploration Administration. It is claimed by the applicant that tungsten in small amounts occurs widely distributed in the greenstone dike in the hanging wall of the main Congress vein. The applicant reports that samples of greenstone dike taken from surface exposures and old mine dumps average 0.173 percent tungsten and that mill tailings from early operations contain 0.045 percent tungsten. The basis of this claim lies in several samples collected and analyzed by the applicant's son-in-law who works in the assay office of the Bagdad Copper Corporation, Bagdad, Arizona.

Assays provided by the applicant are as follows:

Description	Percent Tungsten
Queen, Middle Tunnel, Quartz	0.025
Congress dike on surface	0.08
Mill tailings	0.045
Dike on McKinley Tunnel dump	0.38
Dike on McKinley Tunnel dump	0.33
Dike, No. 2 dump	0.43
Mill tailing	0.13
Congress dike surface	0.20
Dike from No. 3 dump	0.29
Yellow rock No. 3 dump (stained quartz)	0.075
Congress dike surface	0.145
Congress dike surface	0.075
Congress dike surface	0.125

By classifying the above samples into 3 groups according to the nature of the material and taking numerical averages of each, the average analysis is as follows:

Quartz vein material	.050 percent tungsten
Mill tailings	.087 " "
Greenstone dike	.23 " "

To verify the presence of tungsten and determine the nature of its occurrence eleven carefully selected samples were taken by the examiners. The locations of these are shown on the map of the Congress mine, Fig. 2, and are fully described in the engineering section of this report. The samples were carefully prepared and mineralogical and spectroscopic examinations were made by LaMar G. Evans, Petrographer, U. S. Bureau of Mines, Tucson, Arizona, who reports that absolutely no tungsten could be found in the samples. As tungsten could not be detected with the spectroscope, further analyses were not made.

It appears probable that the tungsten reported by the applicant represents either an error in analysis or salting of the samples during preparation. None was detected by this examination.

CONCLUSIONS AND RECOMMENDATIONS

No tungsten could be found in the Congress vein or in the hanging wall dike as claimed by the applicant. Examination of eleven samples by means of the spectroscope revealed that there was absolutely no tungsten present, therefore quantitative analyses were not made. Because of the absence of tungsten, or other strategic and critical ores of value to the defense program, it is recommended that the application be denied.

DMEA-2364 E. A. COLBURN, JR., CONGRESS MINE (TUNGSTEN)
DATE CREEK MINING DISTRICT
YAVAPAI COUNTY, ARIZONA

Engineering Report

By L. L. Farnham
Mining Engineer
U. S. Bureau of Mines

March 1952

DMEA-2364, E. A. COLBURN, JR., CONGRESS MINE (TUNGSTEN)
DATE CREEK MINING DISTRICT
YAVAPAI COUNTY, ARIZONA

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Acknowledgments	1
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History and production	1
Description of the deposit	2
Sampling	3
Conclusions and recommendations	4

ILLUSTRATIONS

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1	Location map	1
2	Mine workings	3

INTRODUCTION

In February 1952, E. A. Colburn, Jr. applied to the Defense Minerals Exploration Administration for an exploration loan amounting to $32,471.40. The application was docketed as DMEA-2364. The sum requested was to be used in the rehabilitation and sampling of certain portions of the underground workings of the Congress mine that had been reported to contain appreciable quantities of tungsten. The field team examined the property during the week of March 3, 1952.

ACKNOWLEDGMENTS

Thanks are extended to E. A. Colburn, Jr. for the help he gave the field team during the examination of the property.

LOCATION AND PHYSICAL FEATURES

The Congress mine is 3 miles north of the town of Congress Junction, Yavapai County, Ariz. Congress Junction, a station on the Santa Fe railroad, lies between Wickenburg and Prescott on U. S. Highway 89. The mine is reached by driving northward out of Congress Junction over 3 miles of an improved dirt road (fig. 1). The property is located at the southern base and near the eastern end of the Date Creek mountains in an area of moderate relief. The altitude of the principal mine workings is about 3,500 feet above sea level.

HISTORY AND PRODUCTION

The Congress gold mine was worked almost continuously from 1894 until 1910. The recorded production during this period, resulting from the treatment of some 692,000 tons of ore, was 388,477 ounces of gold

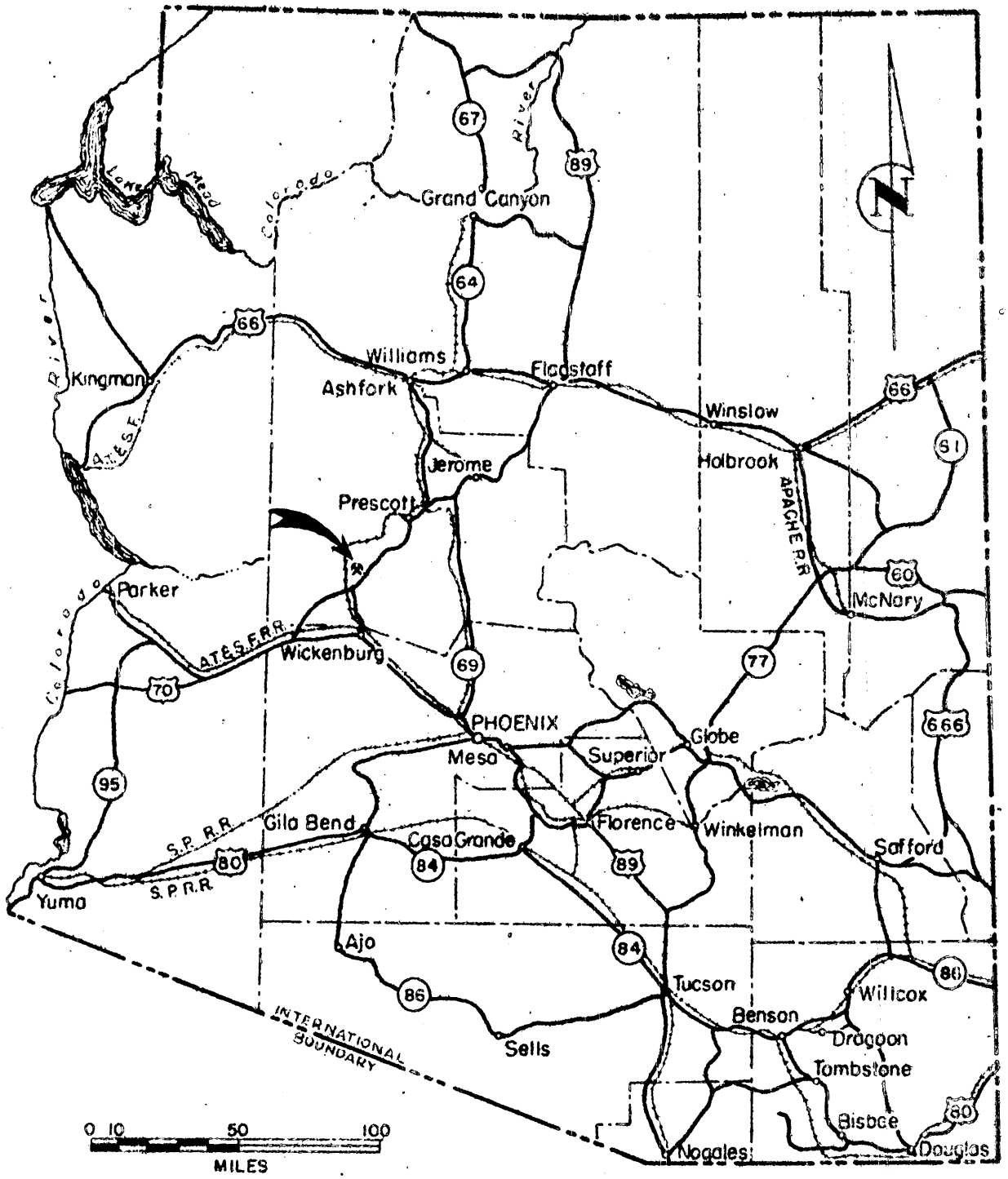

FIG. 1
LOCATION MAP,
CONGRESS MINE,
YAVAPAI CO., ARIZ.
DMEA-2364

and 345,598 ounces of silver, valued at $7,650,000. Subsequent to the closing of the mine in 1910, the various attempts to treat the tailings and mine dumps has probably resulted in the recovery of an additional $500,000 in gold and silver.

The presence of tungsten in the Congress mine was not known nor suspected until it was claimed to have been detected during the summer of 1951. At which time the applicant's son-in-law, who was employed in the laboratory of the Bagdad Copper Co., became interested in tungsten and during visits to the Congress mine collected and analysed different types of rock that were selected from the old mine dumps.

The results of this work, as submitted by the applicant, are as follows:

	Percent WO_3
Queen mid-tunnel quartz	0.025
Congress dike on surface	0.08
Mill tailings	0.045
Dike on tunnel dump	0.38
Dike on tunnel dump	0.33
Dike on No. 2 shaft dump	0.43
Mill tailings	0.13
Congress dike on surface	0.20
Dike from No. 3 shaft dump	0.29
Yellow rock No. 3 dump	0.075
Congress dike, surface	0.145
Congress dike, surface	0.075
Congress dike, surface	0.125

DESCRIPTION OF THE DEPOSIT

Of the several gold quartz veins formerly mined on the property, the so-called Congress vein was the most persistent and probably the most productive. It was this vein and dike that the applicant

proposed to explore for tungsten. The Congress vein consists of a series of quartz filled fractures occurring in and along an intrusive greenstone dike. The dike and the accompanying quartz ranged from 8 to 15 feet thick, had a westerly strike, and an average dip of 25° northward. Although some ore was found in the central and upper portions of the greenstone, the bulk of the production came from a persistent strand of quartz, averaging about 3 feet thick, that occupied the footwall portion of the dike. The gold was associated with irregular masses and streaks of coarsely crystalline pyrite which was largely confined in an ore shoot that pitched northwesterly in the plane of the vein. This lenticular ore shoot, varying greatly in stope length, was mined from the surface to an inclined depth of over 3,000 feet (fig. 2).

SAMPLING

Different portions of the vein outcrop, the mine dumps, and accessible underground openings were observed under ultraviolet light by the Government's examining team but no scheelite was detected, nor were any other non-fluorescent tungsten minerals found on the property.

Nine representative chip samples were taken by the examining team across the greenstone dike and vein quartz in widely separated parts of the underground workings of the Congress vein. Two grab samples also were taken on the dump of No. 2 shaft where the applicant's samples had shown the highest tungsten content. The location

of these 11 samples are shown on the accompanying mine map. The description and spectroscopic results are shown on a separate sheet.

The examining team's samples were crushed and pulverized in the conventional manner. Portions of the resulting pulps were concentrated by panning and this concentrate was tested in a spectroscope in the Southwest Experiment Station of the Bureau of Mines at Tucson. No perceptible quantities of tungsten were present in any of the 11 samples. The difference between the tungsten content of the samples as reported by the applicant and those taken by the examining team probably was due to faulty analytical methods on the part of the applicant's analyst.

CONCLUSIONS AND RECOMMENDATIONS

The examining team's samples were representative of such widely separated portions of the Congress dike and vein that had tungsten existed in the mine, it seems reasonable to presume that it would have been present at least in some of the samples. Inasmuch as the spectroscopic tests were negative on all of the samples it appears logical to conclude that appreciable amounts of tungsten do not occur in the Congress vein and dike.

Therefore, it is recommended that the application for the loan be denied.

RESULTS OF THE SAMPLES TAKEN BY THE GOVERNMENT'S EXAMINING TEAM
AT THE CONGRESS MINE - DMEA-2364

No.	Width	Location	Description	Percent WO_3
12,601	6.0 ft.	1,000 ft. level - 200 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,602	8.0 ft.	1,000 ft. level - 310 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,603	6.0 ft.	1,000 ft. level - 500 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,604	8.0 ft.	650 ft. level - 350 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,605	6.5 ft.	650 ft. level - 275 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,606	4.5 ft.	McKinley Tunnel Level - 25 ft. east No. 2 shaft	Dike with quartz stringers	Nil
12,607	6.0 ft.	McKinley Tunnel Level -110 ft. east No. 2 shaft	Dike with quartz stringers	Nil
12,608	Grab	South central portion of No. 2 shaft dump	Vein quartz only	Nil
12,609	Grab	South Central portion of No. 2 shaft dump	Dike rock only	Nil
12,610	7.5 ft.	250 ft. level - 70 east No. 2 shaft	Dike with quartz stringers	Nil
12,611	2.8 ft.	Pillar No. 2 shaft - below McKinley Tunnel	Quartz vein	Nil

Mining Division
Region IV

March 26, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA-2364, E. A. Colburn, Jr., Congress Mine, (Tungsten) Date Creek Mining District, Yavapai County, Arizona

Enclosed are nine copies of the Engineering Report by L. L. Farnham of the Bureau of Mines.

The Congress Mine was a large producer of gold and silver beginning in the early nineties. The presence of tungsten was claimed to have been detected in 1951.

The samples taken by the field team in different parts of the mine all failed to show the presence of tungsten by spectroscopic tests.

We concur in the recommendation of the examining engineers that the application be denied.

W. H. King
W. H. King

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1952

Reviewed by
DMEA OPERATING COMMITTEE
4-2-52
(date) (JHB)

Mining Division
Date Rec'd.
MAR 24 1952
BUREAU OF MINES
Denver, Colo.

[illegible]
[illegible]

Denver, Feb. 25, 1952

Memorandum

To : W. W. King, Acting Chief, Mining Division, Region IV

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Final Report, DMA Docket 2364, L. A. Colburn, Jr., Congress Mine (Tungsten), Date Creek Mining District, Yavapai County, Ariz.

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations by J. H. Faick of the Geological Survey and L. L. Farman of the Bureau of Mines, and the section on Engineering by Farman for the above report.

The examining team recommends that the loan application be denied as they could find no tungsten in the old Congress Mine.

This report has my approval.

Brochure is enclosed.

Walter G. Storms

cc: W. W. King (8)
L. A. Anderson
DMA-2364
WG

WGStormsjlr.

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

200 New Customhouse
Denver 2, Colorado

March 24, 1952

Memorandum

To: DMTA Field Team, Region IV

From: A. H. Koschmann

Subject: DMTA Docket 2364, Congress Mine (S. A. Colburn, Jr.), Mavapai County, Arizona (Tungsten)

Enclosed are the original and 8 copies of the final geologic report by J. E. Weick of the U. S. Geological Survey, covering the above docket.

It has been recommended that the loan be denied.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O. Box 4126, University Station
Tucson, Arizona

March 19, 1952

Memorandum

To: A. H. Rosenbaum, Denver, Colorado

From: A. F. Turide, Tucson, Arizona

Subject: Geologic Report, Lit A 2344, Congress Mine (C. A. Colburn, Jr.), Yavapai County, Arizona (Tungsten)

Enclosed are the original and 8 copies of the above report by J. K. Black of the Geological Survey.

As tungsten could not be found, even by spectrographic analyses of carefully selected samples, it must be recommended that the application be denied.

A. F. Turide
Acting District Supervisor
Arizona-New Mexico

Enclosures 9

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-2364, M. A. Colburn, Jr., Congress Mine (Tungsten)

Date Creek Mining District

Yavapai County, Arizona

J. A. Falck, Geologist
U. S. Geological Survey

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

March 1952

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By J. N. Reick[1] and L. L. Farnham[2]

Early in 1952, L. A. Vellburn, Jr., the present owner of the old and well known Congress gold mine, applied to the Defense Minerals Exploration Administration for an exploration loan amounting to $32,471.40. The application was docketed as DMEA-2364. The amount requested was to be used for the rehabilitation and sampling of certain portions of the old mine workings that had been reported to contain tungsten. The property was examined and sampled by the field team during the week of March 3, 1952.

Since its discovery in the early nineties the Congress mine has produced about $8,000,000 in gold and silver. The presence of tungsten in the Congress vein was not known or suspected until it was claimed to have been detected during the summer of 1951. At that time several haphazard selected samples, taken from the mine dumps, were reported to have a tungsten content that ranged from a few hundredths of one percent to a maximum of 0.43 percent WO_3.

The samples taken by the field team in different parts of the mine all failed to show the presence of tungsten by spectroscopic tests. It is presumed that faulty analytical methods were employed by the applicant's analyst and that in reality the Congress vein does not contain perceptible amounts of tungsten. Therefore, it is recommended that the application for the loan be denied.

1/ Geologist, U. S. Geological Survey
2/ Mining Engineer, U. S. Bureau of Mines

CONGRESS MINE
(E. A. CLEMENS, JR.)
YAVAPAI COUNTY, ARIZONA
DMEA 2364

TUBE T N

Geology

By
John H. Feick
Geologist, U. S. Geological Survey

CONGRESS MINE
(E. A. COLBURN, JR.)
YAVAPAI COUNTY, ARIZONA
1944 [illegible]

TUNGSTEN

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Fig. 1	Location Map	See Engineering Report
Fig. 2	Underground Workings of Congress Mine	" " "

INTRODUCTION

An application for Government assistance in exploring for tungsten in the Congress gold mine, Yavapai County, Arizona, has been filed with the Defense Minerals Exploration Administration as Docket 7364. The application was made by Mr. W. A. Colburn, Box 153, Congress, Arizona, owner of the mineral rights of the Congress mine, and was received in the Tucson, Arizona office February 15, 1952. The mine was examined March 4 and 5, 1952 for the Defense Minerals Exploration Administration by L. L. Farnham, U. S. Bureau of Mines, and J. B. Reick, U. S. Geological Survey, who were accompanied by the applicant.

GENERAL GEOLOGY

The Congress mine, located 3 miles northeast of Congress Junction, has been described in some detail in two nearly identical publications 1/, both of which include brief descriptions of the geology. The mine is at an altitude of 3600 feet at the base of the eastern end of the Date Creek Mountains. This portion of the range consists essentially of coarse-grained biotite granite intruded by aplite, pegmatite and greenstone dikes. The latter are important to this discussion because these basic dikes are frequently closely associated with the gold ores of the district and are claimed by the applicant to contain appreciable amounts of tungsten. These dikes are of very fine-grained, dense, greenish-black rock and in appearance look somewhat like slightly altered basalt, but may be hornblendites or lamprophyres. For the purpose of this report they will be referred to as greenstones.

1/ Staunton, W. F., Ore Possibilities at the Congress Mine: Eng. and Min. Jour., Vol. 122, No. 20, pp. 769-771, Nov. 13, 1926.
Wilson, E. D., Cunningham, J. B., and Butler, G. M., Arizona Lode Gold Mines and Gold Mining: Univ. Ariz., Ariz. Bur. Mines Bull. 137, pp. 69-73, 1934.

The Congress mine (Fig. 2) property contains several gold-quartz veins of which the Congress, Niagara, and Queen of the Hills have been of particular economic importance, and have been developed by many miles of underground workings. About 400,000 tons of ore valued at $6,000,000 have been produced from these veins. The veins occur within fault fissures which strike generally westward and dip northward. The Congress vein strikes N. 60° - 80° W. and dips 20 to 25 degrees northward and occurs as a fissure filling in granite.

The vein filling consists of massive, greyish-white quartz together with irregular masses, bands, and disseminations of fine-grained pyrite. Galena is rare, no other common sulfides were observed. Very little free gold has been reported and this element occurs in very fine microscopic grains disseminated in the quartz vein in well defined shoots. Iron and manganese stains are apparent on rock in the dumps. Scattered erratically on the walls of the mine and on the rock of the dumps are thin films of white amorphous silica, probably hyalite, that fluoresce bright yellowish green under the ultraviolet light.

In the hanging wall of the Congress vein, and occupying the same fracture zone in the granite, a prominent greenstone dike, ranging from about 5 to 15 feet in thickness, is nearly everywhere present. In detail the structure along this composite vein-like zone is complex and several periods of deformation, with movements parallel to the vein-like structure, are indicated. The granite country rock and greenstone dike have been sheared, crumpled and broken in local areas where deformation has been strongest. Vein quartz has filled fractures and partially replaced the dike and granite, and in some areas this process has resulted in the formation of ore in the dike

Assays provided by the applicant are as follows:

Description	Percent Tungsten
Queen, Middle Tunnel, Quartz	0.025
Congress dike on surface	0.08
Mill tailings	0.045
Dike on McKinley Tunnel dump	0.38
Dike on McKinley Tunnel dump	0.31
Dike, No. 2 dump	0.43
Mill tailing	0.33
Congress dike surface	0.20
Dike from No. 3 dump	0.29
Yellow rock No. 3 dump (stained quartz)	0.075
Congress dike surface	0.145
Congress dike surface	0.075
Congress dike surface	0.125

By classifying the above samples into 3 groups according to the nature of the material and taking numerical averages of each, the average analysis is as follows:

Quartz vein material	.050	percent tungsten
Mill tailings	.087	" "
Congress dike	.23	" "

To verify the presence of tungsten and determine the nature of its occurrence eleven carefully selected samples were taken by the examiners. The locations of these are shown on the map of the Congress mine, Fig. 2, and are fully described in the engineering section of this report. The samples were carefully prepared and mineralogical and spectroscopic examinations were made by Luther G. Evans, Petrographer, U. S. Bureau of Mines, Tucson, Arizona, who reports that absolutely no tungsten could be found in the samples. As tungsten could not be detected with the spectroscope, further analyses were not made.

It appears probable that the tungsten reported by the applicant represents either an error in analysis or salting of the samples during preparation. None was detected by this examination.

CONCLUSIONS AND RECOMMENDATIONS

No tungsten could be found in the Congress vein or in the hanging wall dike as claimed by the applicant. Examination of eleven samples by means of the spectroscope revealed that there was absolutely no tungsten present, therefore quantitative analyses were not made. Because of the absence of tungsten, or other strategic and critical ores of value to the defense program, it is recommended that the application be denied.

[illegible]-2304 E. A. [illegible], Jr., [illegible] MINE ([illegible])
[illegible] MINING DISTRICT
YAVAPAI COUNTY, ARIZONA

Engineering Report

by L. L. Farnham
Mining Engineer
U. S. Bureau of Mines

March 1952

RI-2304, G. A. GOLDIN, JR., [illegible] (TUNGSTEN)
[illegible] DISTRICT
[illegible], ALASKA

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INTRODUCTION

In February 1952, E. A. Colburn, Jr. applied to the Defense Minerals Exploration Administration for an exploration loan amounting to $32,471.40. The application was docketed as DMEA-2364. The sum requested was to be used in the rehabilitation and sampling of certain portions of the underground workings of the Congress mine that had been reported to contain appreciable quantities of tungsten. The field team examined the property during the week of March 3, 1952.

ACKNOWLEDGMENTS

Thanks are extended to E. A. Colburn, Jr. for the help he gave the field team during the examination of the property.

LOCATION AND PHYSICAL FEATURES

The Congress mine is 3 miles north of the town of Congress Junction, Yavapai County, Ariz. Congress Junction, a station on the Santa Fe railroad, lies between Wickenburg and Prescott on U. S. Highway 89. The mine is reached by driving northward out of Congress Junction over 3 miles of an improved dirt road (fig. 1). The property is located at the southern base and near the eastern end of the Date Creek mountains in an area of moderate relief. The altitude of the principal mine workings is about 3,500 feet above sea level.

HISTORY AND PRODUCTION

The Congress gold mine was worked almost continuously from 1894 until 1910. The recorded production during this period, resulting from the treatment of some 692,000 tons of ore, was 388,477 ounces of gold

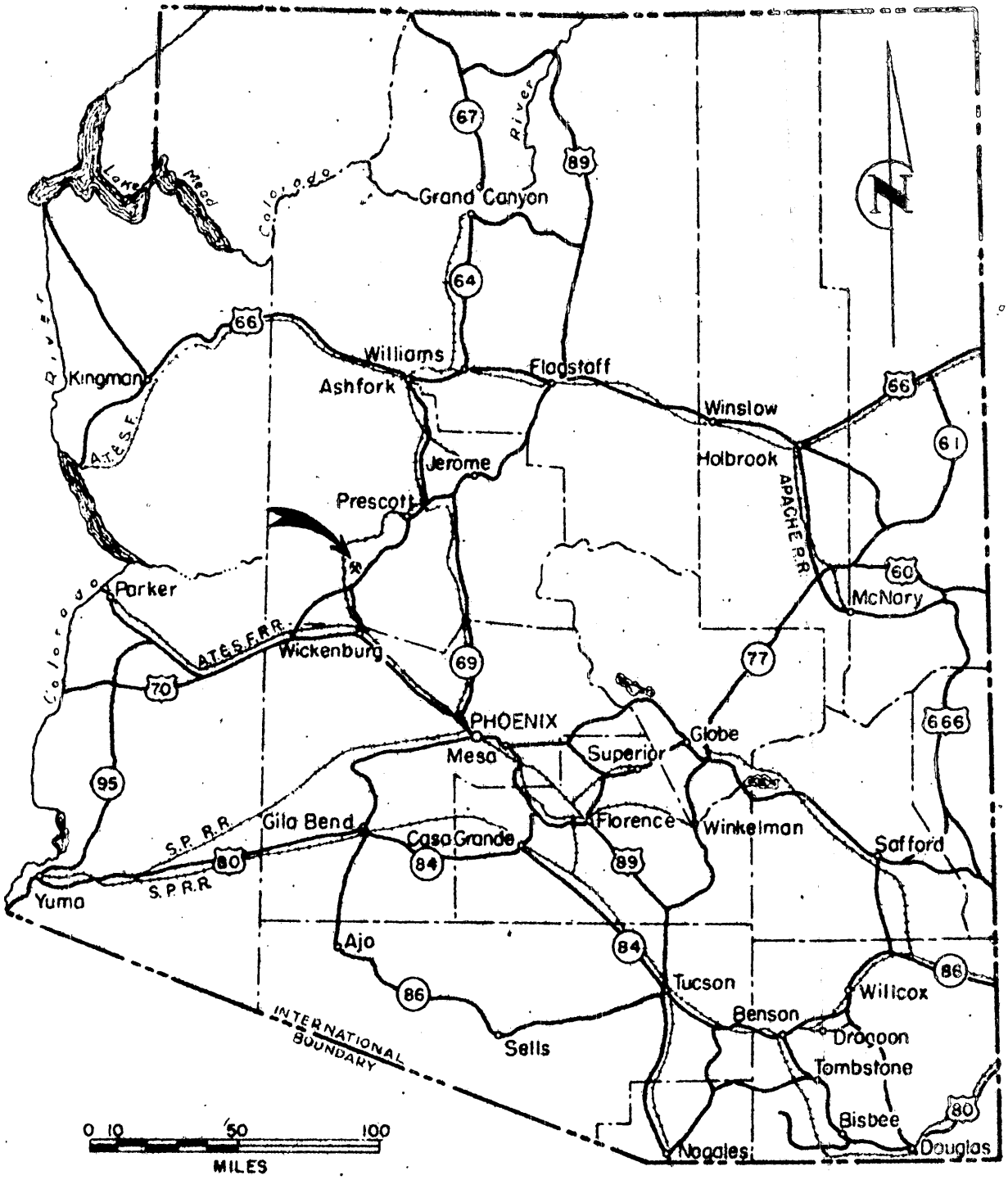

FIG. 1
LOCATION MAP,
CONGRESS MINE,
YAVAPAI CO., ARIZ.
DMEA-2364

and 345,598 ounces of silver, valued at $7,650,000. Subsequent to the closing of the mine in 1910, the various attempts to treat the tailings and mine dumps has probably resulted in the recovery of an additional $500,000 in gold and silver.

The presence of tungsten in the Congress mine was not known nor suspected until it was claimed to have been detected during the summer of 1951. At which time the applicant's son-in-law, who was employed in the laboratory of the Magdad Copper Co., became interested in tungsten and during visits to the Congress mine collected and analyzed different types of rock that were selected from the old mine dumps.

The results of this work, as submitted by the applicant, are as follows:

	Percent WO3
Queen mid-tunnel quartz	0.025
Congress dike on surface	0.08
Mill tailings	0.043
Dike on tunnel dump	0.36
Dike on tunnel dump	0.33
Dike on No. 2 shaft dump	0.43
Mill tailings	0.13
Congress dike on surface	0.20
Dike from No. 3 shaft dump	0.29
Yellow rock No. 3 dump	0.075
Congress dike, surface	0.145
Congress dike, surface	0.075
Congress dike, surface	0.125

DESCRIPTION OF THE DEPOSIT

Of the several gold quartz veins formerly mined on the property, the so-called Congress vein was the most persistent and probably the most productive. It was this vein and dike that the applicant

proposed to explore for tungsten. The Congress vein consists of a series of quartz filled fractures occurring in and along an intrusive greenstone dike. The dike and the accompanying quartz ranged from 8 to 15 feet thick, had a westerly strike, and an average dip of 25° northward. Although some ore was found in the central and upper portions of the greenstone, the bulk of the production came from a persistent strand of quartz, averaging about 3 feet thick, that occupied the footwall portion of the dike. The gold was associated with irregular masses and streaks of coarsely crystalline pyrite which was largely confined in an ore shoot that pitched northwesterly in the plane of the vein. This lenticular ore shoot, varying greatly in stope length, was mined from the surface to an inclined depth of over 3,000 feet (fig. 2).

SAMPLING

Different portions of the vein outcrop, the mine dumps, and accessible underground openings were observed under ultraviolet light by the Government's examining team but no scheelite was detected, nor were any other non-fluorescent tungsten minerals found on the property.

Nine representative chip samples were taken by the examining team across the greenstone dike and vein quartz in widely separated parts of the underground workings of the Congress vein. Ten grab samples also were taken on the dump of No. 2 shaft where the applicant's samples had shown the highest tungsten content. The location

of these 11 samples are shown on the accompanying mine map. The description and spectroscopic results are shown on a separate sheet.

The examining team's samples were crushed and pulverized in the conventional manner. Portions of the resulting pulps were concentrated by panning and this concentrate was tested in a spectroscope in the Southwest Experiment Station of the Bureau of Mines at Tucson. No perceptible quantities of tungsten were present in any of the 11 samples. The difference between the tungsten content of the samples as reported by the applicant and those taken by the examining team probably was due to faulty analytical methods on the part of the applicant's analyst.

CONCLUSIONS AND RECOMMENDATIONS

The examining team's samples were representative of such widely separated portions of the Congress dike and vein that had tungsten existed in the mine, it seems reasonable to presume that it would have been present at least in some of the samples. Inasmuch as the spectroscopic tests were negative on all of the samples it appears logical to conclude that appreciable amounts of tungsten do not occur in the Congress vein and dike.

Therefore, it is recommended that the application for the loan be denied.

Results of [illegible] Samples [illegible] Contained Gold
[illegible] - [illegible]-2364

No.	Width	Location	Description	Percent WO_3
12,601	6.0 ft.	1,000 ft. level - 200 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,602	8.0 ft.	1,000 ft. level - 310 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,603	6.0 ft.	1,000 ft. level - 300 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,604	8.0 ft.	650 ft. level - 350 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,605	6.0 ft.	650 ft. level - 275 ft. east No. 3 shaft	Dike with quartz stringers	Nil
12,606	4.5 ft.	McKinley Tunnel Level - 25 ft. east No. 2 shaft	Dike with quartz stringers	Nil
12,607	6.0 ft.	McKinley Tunnel Level -110 ft. east No. 2 shaft	Dike with quartz stringers	Nil
12,608	Grab	South central portion of No. 2 shaft dump	Vein quartz only	Nil
12,609	Grab	So to central portion of No. 2 shaft dump	Dike rock only	Nil
12,610	7.5 ft.	250 ft. level - 70 east No. 2 shaft	Dike with quartz stringers	Nil
12,611	2.8 ft.	Pillar No. 2 shaft - below McKinley Tunnel	Quartz vein	Nil

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. DMEA-2364
Metal or Mineral
Date Received 2-4-52
Amount $
Participation (Government %)

RECEIVED
FEB 4 1952
Defense Minerals Administration

E. A. Colburn, Jr.
P. O. BOX 153
CONGRESS, ARIZONA

Name and address of applicant

Date Jan. 17, 1952

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

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

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

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

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

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

none
(Name of company)

By [signature]
(Signature of authorized official)

Jan 17, 1952
(Date)

none
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

E. A. Colburn, Jr.
P. O. BOX 153
CONGRESS, ARIZONA

Form MF-103 Answers

1. (a) The property upon which the exploration will be done is the Congress ~~mine~~ on the Congress mine, Congress, Arizona. As specified below the Congress vein and its accompanying dyke is the only vein, as far as is now known, which contains commercial amounts of tungsten on the Congress mine property. Therefore, the application is limited to two claims which cover the vein and dyke.

(b) The owner is the applicant.

(c) The property to be explored is the same as in (a) and consists of the Congress claim U. S. Patent No. 875 and the Whynot claim U. S. Patent No. 882 both in the Congress mine groupe, Date Creek Mining District, Yavapai County, Arizona. Section 14, Township 10 North, Range 6 West. The reason for limiting the application to these two claims is that they hold the apex of the Congress lode which is in or alongside the Congress diorite dyke which latter apparently contains most of the tungsten in this area, at least within the confines of the Congress groupe.

2. (a) The metal which we expect to find is tungsten. We already have gold and silver ores in large tonnages, but of low grade, which would be a by product of the tungsten operation and furnish revenue to pay for most of the mining and milling costs.

(b) The Congress gold vein traverses the Congress and Whynot claims and from the openings on this vein there has been produced 304,202 tons of gold ore averaging 0.7 oz. gold per ton. Attached is a map of the workings on this vein, and upon other veins and property not pertinent to this application.

The general geology of the district is well known and need not be be elaborated except to give the general features. The veins occupy thrust fault planes running generally easterly and westerly and are probably of the type described by Spurr as veindikes running through a granite basement complex, probably pre-Cambrian. Associated with these veins are diorite or basalt dykes along which the best ore is found. Some of the veins, however are entirely in the granite formation but are usually accompanied by thrust faultin both per and post-mineral.

The Congress vein, as mined in the past, lies on the footwall of a large diabase dyke which has a width of from 10' to 12'. This dyke is greatly shattered by minor faulting and is traversed by many quartz seams containing gold associated with iron pyrite. Seams vary from a fraction of an inch to several feet in width and are more prevelant in some parts of the dyke than at other points. A network of other seams are almost invisible and are often mineralized by fine grained iron pyrite, as is also the case with the dyke ground mass in many instances. A sample of the dyke was analysed and found to contain the following: SiO_2- 52.20%; Al_2O_3 - 13.40%; FeO - 9.75%; MnO - 1.90%; CaO - 9.60%; and MgO - 1.16. The amount of iron would indicate a high specific gravity and in hand samples this is very apparent. In dyke material which has weathered for a number of years on the dump the surfaces have turned from dark green to black and dark red.

E. A. Colburn, Jr.
P. O. BOX 153
CONGRESS, ARIZONA

Our assays indicate that the tungsten is associated with the ore having the darkest color, therefore probably the most iron, and it reasonable to suppose that the sink and float process would make a seperation of this heavy tungsten bearing ore from the unmineralized portions of the dyke and from the barren granite as well. However, where pegmatite dykes travers the granits we find some tungsten as well.

As indicated above the Congress vein which consists almost entirely of quartz mineralized by iron pyrite was largely on the contact between the footwall of the dyke and the granite country rock and most of the stopes were run in this position. However, much ore was mined throught the dyke and in some cases on the hanging wall side, and even out into the granite. It may be well here to explain that the dip of the vein and dyke average about 25 deg. The quartz vein was mined out and enough room was blasted in the dyke to make room for working, possibly 4 ft. or more according to the width of the vein. The stopes were back filled with low grade gold ore and dyke rock, the surplus being hoisted and put on the dump. Therefore The stope fills consist of quartz ore (gold) and dyke. The dyke standing above or in the hanging wall is also ore having smaller amounts of quartz in the form of stringers and feeders. It is probable that the whole dyke from wall to wall including the old stope fills will pay to work on a basis of the recovery of the gold and tungsten. I estimate that for each four tons of ore in the stope fills that there should be 10 tons standing above in the unmined portion of the dyke. Probably there is much more, as I have used a width of only six feet for the unbroken remnant of the dyke when it may be much more. This gives a total tonnage in fills and dyke in place in immediate contact with the gold ore shoot. and no where else in the dyke, of 964,707 tons. Accompanying this application are maps showing the extent of the stopes on the Congress vein and the shafts and drifts which opened the orebody.

Now let us look at the value of this material. The mine dumps are a mixture of development waste from work on the dyke in ground that at the time was waste, waste from the stopes and waste from the drifts and crosscuts in the granite country rock. Therefore the dumps should be of much lower grade than the material in the fills and that left standing in the dyke from the standpoint of both gold and tungsten especially the latter. I will not carry forward this matter further, as this application is principally concerned with the value of the tungsten rather than gold. But from the above statement it may be seen that the value of the dump rock is very pertinent to the value of the ore in the fills and in place in the dyke.

The average value of the dyke rock in the dumps, surface exposures of the dyke and samples of fine material on the dumps is around 0.173% WO3. Even the old tailing pile assays 0.045 which adds considerably to the value of those tailings. Therefore we believe that the general average of the ore as specified underground would be much higher than the average of the mine dumps for reasons already given.

By reference to the map it may be seen that the Congress vein

E. A. Colburn, Jr.
P. O. BOX 153
CONGRESS, ARIZONA

is opened by three shafts, No. 1 is 1100 ft. deep; No2 is 1700ft. deep and No. 3 is 3900 ft. deep, down the dip of the vein which has a strike of about 70 to 80 degrees West and an average dip of around 25 deg North. Of three shafts only portions are open for sampling. No. 1 shaft has recently been reopened to the 157' level and this level for a distance of 200 ft. west has been cleared. Balance of this shaft, so far as we know, is caved more or less. Until 18 months ago No. 2 shaft was open to the water level at 1225 ft. but at that time boys started a fire therein which gutted the shaft from the water to surface causing some caving so that the shaft is now dangerous but still in condition for limited examination. Shaft No. 3 is slightly caved at the collar but id in safe condition to nearly the 1100 ft. point. This shaft connects with No. 2 shaft above this cave upon two levels, the 650 Ft level and the 1,000 ft. level. However, these levels are caved at a distance of several hundred feet east of No. 3 shaft. I do not think that the 1,000 ft. level is caved for more than a total distance of one hundred feet, as it may be entered for long distances from each shaft. The 650 ft. level is probably much more caved, as it is impossible to enter the station from No. 2 shaft, but the level can be traversed for several hundred feet easterly from shaft No. 3. However a good draft comes though both drifts into No. 2 shaft which is an upcase. I have also walked on the 1150 ft level for 700 ft. west from No. 2 shaft. Distance between shafts is 1,000 ft.

The dyke in most parts of the mine has not been penetrated to any great extent, i.e. there are few crosscuts and raises through it where samples can be taken of the dyke which is the point of tungsten deposition. Therefore the object of this application for funds is to open at least one of these levels, 1,000 preferably, and if this work is satisfactory to clean up the other level and sample it to a point at least as far as No. 2 shaft. This will allow us to drill holes through the dyke which should be sampled, or to run raises through the dyke for the same purpose. Also No. 3 shaft should be sampled at intervals where the dyke is in same and the dyke should be drilled and sampled as well. For instance the hanging wall should be drilled at regular intervals on the 1,000 ft. level until the old stope was reaced then drill holes should be made through the dyke at much less intervals, as I believe that the tungsten and gold mineralization occupy relatively parallel positions in the dyke and in the vein. Of course, this will be checked in the sampling campeign.

This sampling would involve putting a hoist and compressor at the collar of No. 3 shaft, opening the partially caved collar and extending pipe and trach to the 1,000 ft. level, laying pipe and trach in that level to the cave and then taking up cave and lay pipe to No. 2 shaft in order to drill the hanging wall all the way through at, say, 20 ft. intervals. This interval might be reduced to 10 ft. if thought necessary, as the cost would be comparitively small.

E. A. Colburn, Jr.
P. O. BOX 153
CONGRESS, ARIZONA

Form MF-103 Answers #4

The economic aspects of the property are as follows: The mine is located within three miles of the paved highway No. 89 and the same distance of the Santa Fe R. R. both being at Congress Junction Arizona, as is also Highway No. 71 which connects No. 89 with No. 70 at Aguila a distance of about 25 miles. The road to the mine is a dirt road but in good condition and almost level. Power is to be had within 7,000 ft. of the mine and milling water may be had in many mine openings and at a well in Martinez Creek 6,600 ft from the mine with which it is connected by four inch pipeline, pump, etc. Congress Junction is 7o miles from Phoenix, 15 miles from Wickenburg and about 45 miles from Prescott over Highway 89. Climatic conditions are of the best in the state or in the nation, so that it is a very desirable place in which to work and to operate. One of the very best, in fact.

Personally, the applicant has had many years esperience in mining, having learned the first principles in Cripple Creek, Colo., having worked all the way up from mucker to General Superintendent. Last work in the Cripple Creek District was superintendent of the Ajax G. M. Co. at Victor, Colo. Built a 300 ton cyanide plant here which initiated all slime grinding for the district. This same plant used electrolysis in oxidizing the telluride ore in a very successful manner which obviated the costly roasting process. The ore was generally low grade, but we made several conclusive tests on ores up to $30. per ton in value with very high recoveries on tonnages averaging about 100 tons per high grade test. Tailing on these tests averaged less than $1.00 per ton. Why this process has not be used on other difficult gold ores is a mistery to me.
Also was mill superintendent Royal Tiger Mines, Breckenridge, Colo. Mill superintendent Alta Mines, Telluride, Colo. patentee of flotation machines, operator of flotation laboratory in Denver, Colo., and San Francisco, Calif. Also superintendent of Mammoth Mines, Inc., Arizona and much technical and consulting in mines and prospects.

Sampling: General average of 51 samples taken in 1948 by disinterested party most of which were from workings on Congress vein gave the following averages: Gold at $35.00 per oz.

General average of all samples taken	$18.17
Average of all fills through 1" screen	$11.60
Average of fills through ¼" screen	$15.38

The above samples were not run for tugnsten.

An average of 14 samples from the dumps including coarse dyke rock and fine quartz screenings gave 0.173 % WO3 which would amount to $10.89 with tungsten at $63 per unit. Some samples ran as high as o.43%. The coarse sizes invariably ran better than the fines or screenings and the dump samples from the old mill ran down as low as 0.03%. Apparently the dyke contains most of the tungsten and the quartz vein not nearly so much. This consition is also true in samples taken from other dykes on the property which are not included in this application because of inaccessibility at this time.

Form MF-103 Answers #5

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3. (a).

The proposed work would include the exploration of the dyke by the drilling of holes in the hanging wall of the most important and accessible workings on the Congress vein. In order to get the best results the dyke should be sampled and drilled at regular intervals and the point to start this work would be the No. 3 shaft as that shaft is not caved, except for a small cave at the collar, from surface to nearly the 1100 ft. level. The 1,000 ft. level is perhaps the least caved of the levels connecting the shafts Nos. 2 and 3 above the 1100 ft. level and should be the first to receive sampling after the Shaft No. 3 down to that point has been sampled. There will be from 100 to 200 ft. of cleaning out to be done on this level between the shafts before the entire drift can be sampled.

When this has been accomplished the 650 ft. level between the two shafts should be cleared of caves and sampled between the two shafts. After that the work should be extended toward the east on this level until the No. 1 shaft has been encountered or the end of the ore shoot has been reached which is shown by the maks at some distance east of the No 1 shaft. This latter is important in that this level has the longest ore shoot in the mine and is in the heart of the gold ore body as originally mined. It includes a distance of over 1,600 ft most of which has been stoped and some of which is now caved. We do not know what the condition of the 650 ft. level is between No 2 and No. 3 shafts, but there is a good draft coming through. Probably 300 ft. would clean it up. From the No 2 shaft east the 650 drift is in fair condition part of the way to No. 1 shaft but would require the taking up of several small caves in that distance. It is probable that another 200 ft. of spiling and timbering would be required to get into this territory.

Therefore the total requirements of cleaning up, spiling and or timbering would be as follows:

Collar of No. 3 shaft	75 ft.	
1,000 ft level	200 "	
650 " "	300 "	between no. 3 and No 2
" " "	200 "	" No 2 and No 1
Total	775 ft.	

The lineal feet of dyke to be sampled would be as follows:

No. 3 shaft, collar to 1000 ft level	1,000 ft.
1000 ft level No 3 shaft to No 2	1,000 "
650 ft level No 3 shaft to No 1	1,600 "
Total	3,600 "

Total number of holes to be drilled would be 180 if a sampling interval of 20 ft. were used. Each hole would require about three samples or a total of 540 samples in all. All samples should be run for tungsten and gold and silver.

Total cost of the project will be $ 32,471.40

(b). Thirty days would be required to start project
300 " " " " " complete project.

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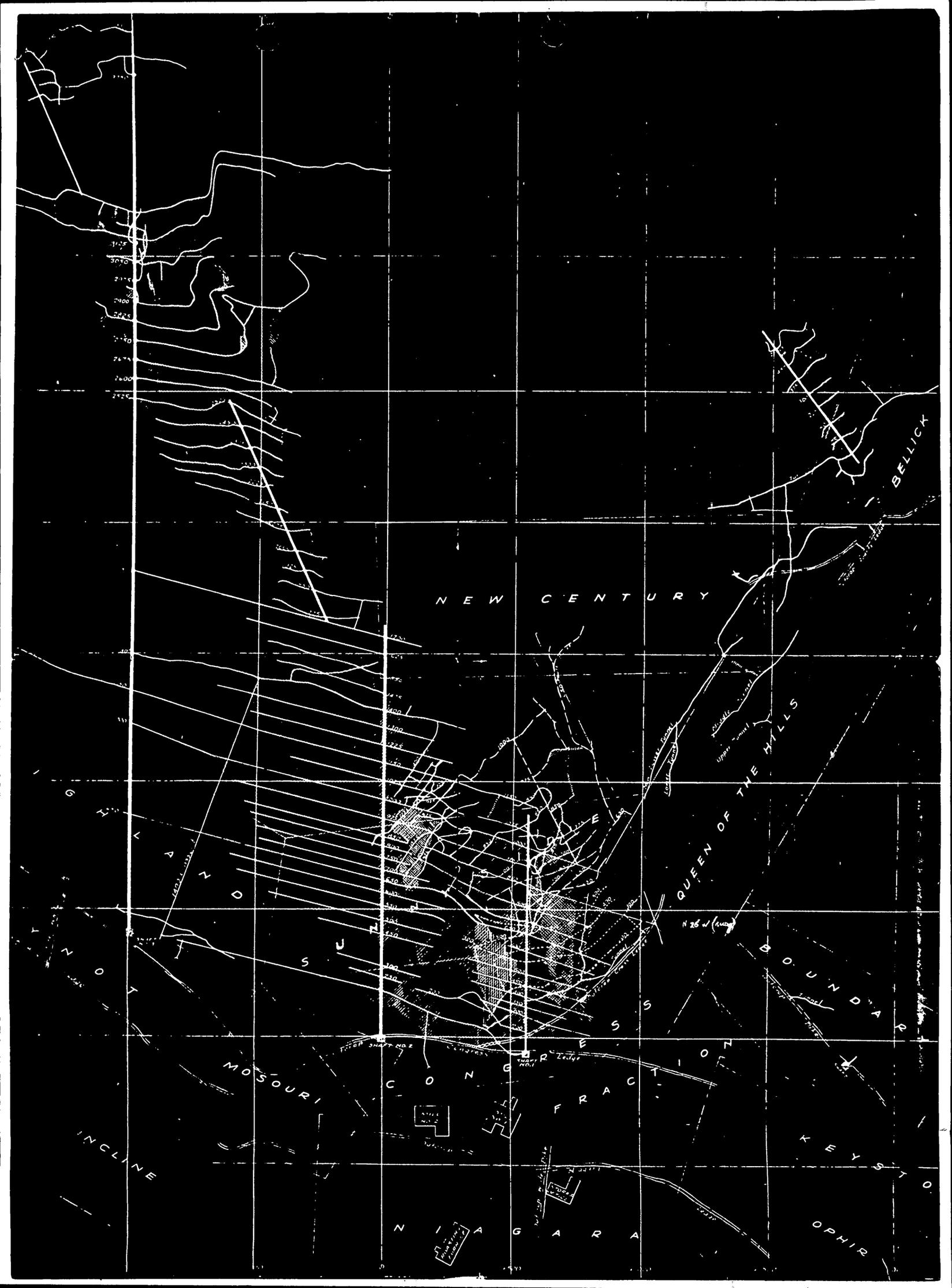
Form MF-103 Answers #6.

4. Map attached.


NEW CENTURY
BELLICK
QUEEN OF THE HILLS
Upper Tunnel
Lower Tunnel
N 26 W (Rudy)
MOSOURI
CONGRESS
FRACTION
KEYSTO
OPHIR
NIAGARA
INCLINE
BOUNDARY
Top Shaft No 2
Shaft No 1

Form MF-103 Answers #7

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5. No buildings, installations, fixtures or improvements other than underground workings as shown on map.

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Form MF- 103 Answers #8

6. One small building, say 10' by 12' insize, to house the hoist and furnish room to work on samples, change room etc.

Cost of building $250.00

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Form MF-103. Answers #9.

7.	(a)	Rented equipment; Carried ford.		$250.
		1- 25 HP gasoline single drum hoist	Rental /Mo $124.	Period $1240.
	(b)	Purchased equipment;		
		Rail- 7,200 ft.- 2,600 yds @ 12#/ yd 31,200# 15.6 tons@ $150.00		2340.
		Pipe-3,600' 2" @ .57		2052.
		Fish plates 350 pair 1551# @ $125 ton		91.
		Bolts and nuts 1800 - 342#		50.
		Spikes 7,200 1028# @ .10		103.
		Ties 1800- 4" x 6" x 30" @ .80		1240.
		Timbers 125 sets 13,375 bd.ft. @ $135		1805.
		Lagging 125 sets 18,500 ft 2"x12" @ $100		1850.
		Blocking, wedges etc.		150.
		Signal cable and bell		150.
		Cable 1100ft. ½" @ 20½c/ft. for hoist		225.
		Shovels and hand tools		150.
	(c)	Equipment furnished by myself:		
		Compressor	$185 per month	1850.
		Drills	60 " "	600.
		Drill steel	6.20	62.
		Hose	6 " "	60.

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Form MF-103 Answers #10.

8. Labor.

Hoistman	192 days @ $13.75		$2,640.
Supervisor	"	16.50	3,168.
Miners	278 "	13.75	3,622.50
Muckers	258 "	13.75	3,547.50
Track & pipe men	144 days @ $ 13.75		1,953.50
Samplers	180 holes 60 days @ $13.75		825.00
Total			$13,803.00

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Form MF-103. Answers #11.

9. Cost of materials, supplies, water, Etc.

Repairing road to No. 3 shaft	$200.00
Hauling hoist and placing same	100.00
Hauling rail @ 2dol. per ton	35.00
Hauling pipe	25.00
Hauling timber	150.00
Hauling compressor and placing	100.00
Sample equipment and sacks	100.00
Assaying 540 samples @ $5.50	2970.00
Fuel for hoist and compressor 10 gal / day	518.40
Lub. oil 50 gal @ .40	20.00
Water for drilling 100 gal / day, 60 @ $3.20	182.00
Total	$4400.40

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Form MF-103 Answers #12.

10. (a) Am prepared to invest $8,117.85 in this project

(b) This amount is sufficient to pay my part of the cost of the project which would be 25% of the total cost.

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

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

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2364

Date received 2-4-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 4 1952

E. A. Colburn, Jr.
P. O. BOX 153
CONGRESS, ARIZONA

Name and address of applicant

Date Jan. 17 1952

INSTRUCTIONS

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

GENERAL TECHNICAL DATA

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

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

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

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

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

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

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

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

12. Ore or Mineral Reserves:

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

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

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

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

TOTAL ORE OR MINERAL RESERVES

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

(*c*) If placer:

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

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

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

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

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

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

13. Access Roads:

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

14. Water Supply:

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

15. Power:

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

16. Labor:

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

17. Equipment and Facilities:

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

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

CERTIFICATION

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

none
(Name of company)

By [signature]
(Signature of authorized official)

Jan 19 1952
(Date)

(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

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CONGRESS, ARIZONA

Form MF-100 Answers Question No. 1.

1. Materials produced.

The materials to be produced would be tungsten and smelter silicious flux.

Byproducts would be gold and silver.

Form MF-100 Answers question No. 3.

E. A. Colburn, Jr.
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CONGRESS, ARIZONA

3. Only one operation as follows:

(a) Nearest town and shipping point is three miles away. the mine is three miles from Congress Junction in a northwesterly direction over good flat road. Highway 89 is at Congress Junction as well as Highway 70 and the Santa Fe Railroad.

(b) The Mining district is the Martinez Mining District.

(c) The property is in Section 14, Township 10 North, Range 6 West

(d) Yavapai County, Arizona.

Form MF-100. Answers to question No. 16.

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16. Labor.

The mine has been idle for some years other than operations on the tailing dumps and mine dumps before 1942 and for a period of about nine months since 1947. Some work was done underground during the above time. I came into possession of the underground mine in 1947 and since that time leasers have been working intermittenly on parts of the property. The average crew would be from three to four men somethimes more. We have done no milling, but shipped direct to the smelter.

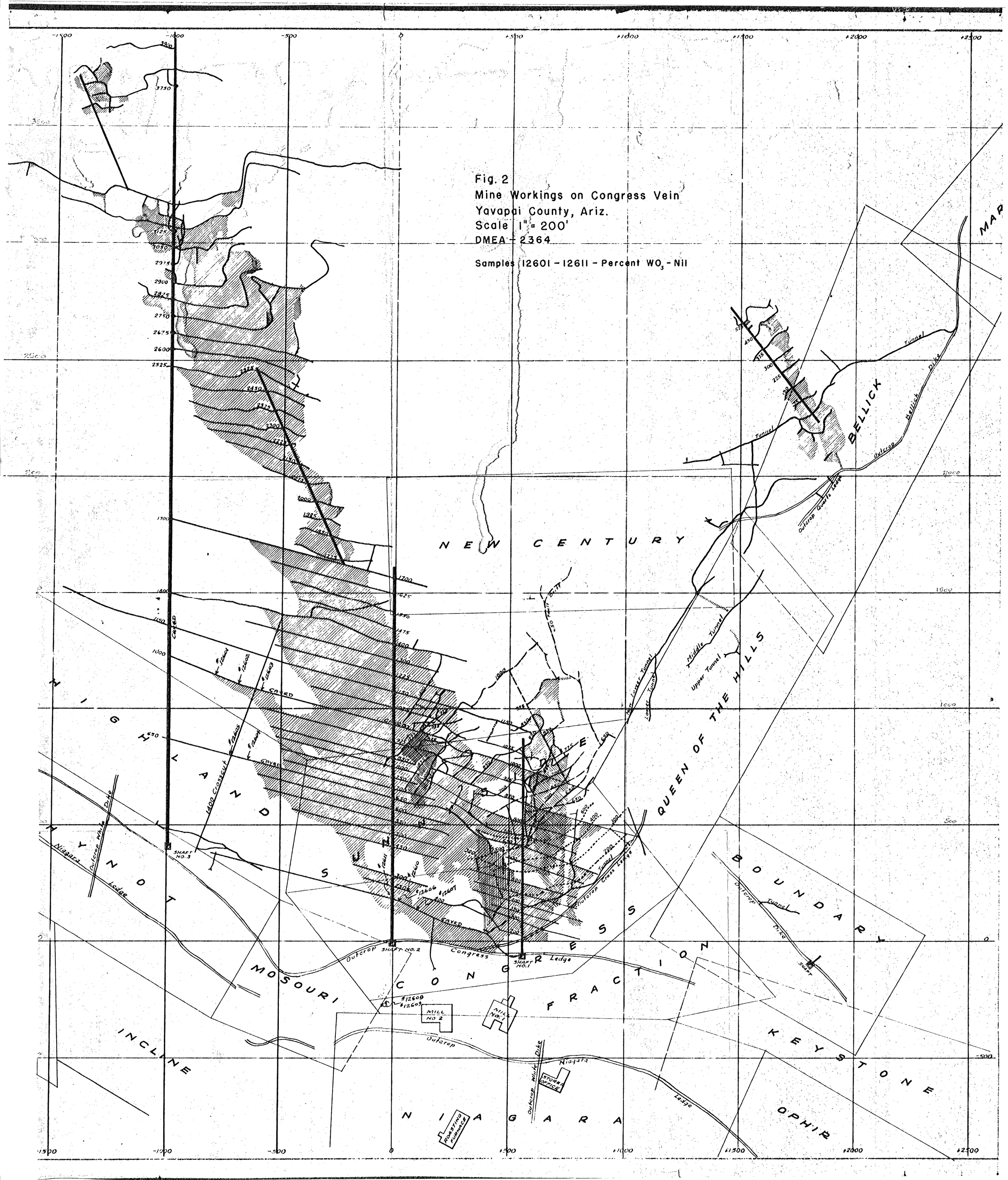
Fig. 2
Mine Workings on Congress Vein
Yavapai County, Ariz.
Scale 1" = 200'
DMEA - 2364
Samples 12601 - 12611 - Percent WO_3 - Nil
NEW CENTURY
BELLICK
QUEEN OF THE HILLS
HIGHLAND
MOSOURI
CONGRESS
FRACTION
KEYSTONE
BOUNDARY
OPHIR
NIAGARA
INCLINE
MAP
Tunnel
Bellick Dike
Outcrop
Outcrop Quartz Ledge
Middle Tunnel
Upper Tunnel
Lower Tunnel
Fault
Outcrop Cross Ledge
Outcrop White Dike
Niagara Ledge
Congress Ledge
SHAFT NO. 1
SHAFT NO. 2
SHAFT NO. 3
SHAFT
1400 Crosscut
CAVED
MILL NO 2
MILL NO. 1
STORE & OFFICE
ROASTING FURNACE
#12601
#12602
#12603
#12604
#12605
#12606
#12607
#12608
#12609
#12610
#12611

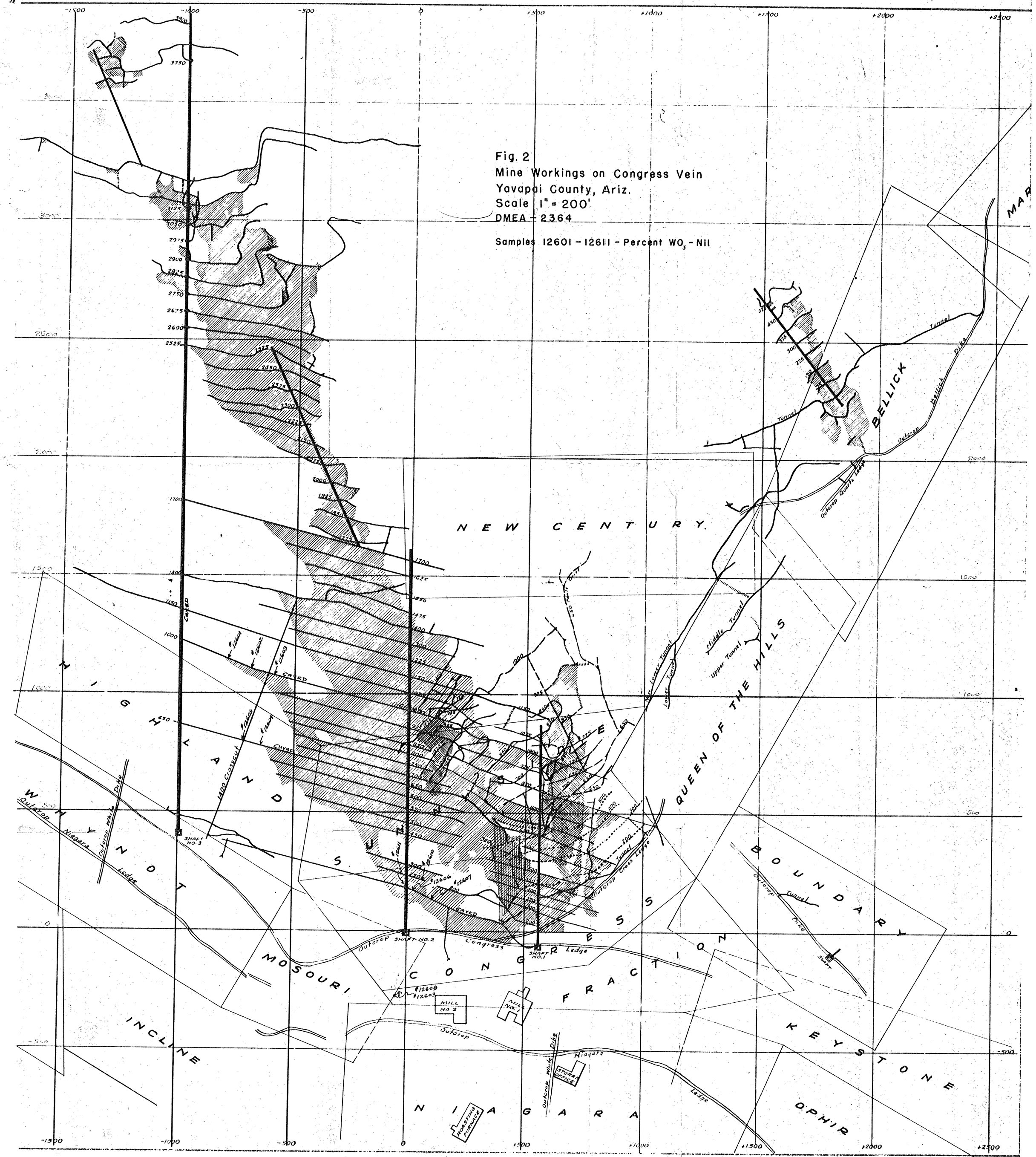

Fig. 2
Mine Workings on Congress Vein
Yavapai County, Ariz.
Scale 1" = 200'
DMEA - 2364

Samples 12601 - 12611 - Percent WO_3 - Nil