OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

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

Office of
Executive Officer
DMA Field Team
Region III

November 9, 1951

Memorandum

To: A. C. Johnson, Bureau of Mines, Reno, Nevada

From: Executive Officer, DMA Field Team, Region III

Subject: Docket DMA-969 - Baxter Fluorspar Deposit, Mineral County, Nevada

On May 29 I sent four copies of a report entitled, "Ground-Water Supply for the Proposed Mill at Baxter Fluorspar Mine, Mineral County, Nevada (Docket DMA-969)", by T. W. Robinson, District Engineer, Geological Survey, Water Resources Branch, dated May 24, 1951, to Tom Lyon.

I now find that we have need to refer to Robinson's report, but do not have a copy in our files. If you have an extra copy I will appreciate it if you will have it copied and one copy sent to us.

If you have no file copy, you may be able to get one from Robinson or from the Carson City Office of the Water Resources Branch of the Geological Survey.

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

October 24, 1951

Mr. Bruce A. Gould
Fallon Fluorspar Mines, Inc.
X100 Mills Tower
San Francisco 4, California

Dear Mr. Gould:

This is in reference to your letter of October 20, 1951, requesting additional prints of the Baxter Fluorspar property, DMA-969.

Four prints of each of the following are being sent to you today under separate cover:

1.	Fig. 1	Plan Map						
2.	Fig. 5	Cross Section	through	D.D.	Hole			1
3.	Fig. 6	"	"	"	"	"	"	2
4.	Fig. 7	"	"	"	"	"	"	3
5.	Fig. 8	"	"	"	"	"	"	4
6.	Fig. 9	"	"	"	"	"	"	5
7.	Fig. 10	"	"	"	"	"	"	6
8.	Fig. 11	"	"	"	"	"	"	7

It will be a pleasure to see you again when you come to Reno on your trip east.

Sincerely yours,

A. C. Johnson
Chief, Mining Division
Region III

FALLON FLUORSPAR MINES, INC.

ADDRESS ALL REPLIES TO SAN FRANCISCO

MINE:
BAXTER MINE
P. O. BOX 391, FALLON, NEVADA

OFFICE
1100 MILLS TOWER
SAN FRANCISCO 4, CALIFORNIA

October 20th, 1951

VIA AIR MAIL

Mr. A. C. Johnson
U. S. Bureau of Mines Mining Branch
Reno, Nevada

Dear Mr. Johnson:

Returned about two weeks ago from a four months siege in Washington during which I made every effort to secure a Purchase Contract and Guaranteed Loan from General Services Administration. I don't know yet whether I have been successful, although they have promised me a Letter of Intent which indicates that I should get both the loan and the contract.

I want to take this opportunity to thank you and your office for the very good help you have given us in preparing our reports and in all other respects.

While in Washington they took just about all of my maps away from me, and I find that we now have few maps here to work with. I am wondering whether you would be kind enough to send us four more white prints each of the diamond drill holes and the logs, the topographic map, and the claim map. I would appreciate it very much if you could find the time to have these made up and sent to us.

I will probably be going East again within the next ten days; however, I believe I will be in Reno before that time and, if so, will certainly call on you.

Best regards,

FALLON FLUORSPAR MINES, INC.

Bruce A. Gould

Bruce A. Gould

BAG:es

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMA-969, BAXTER FLUORSPAR DEPOSIT, MINERAL COUNTY, NEV.

R. J. Hobson, Mining Engineer
U. S. Bureau of Mines

W. P. Irwin, Geologist
U. S. Geological Survey

T. W. Robinson, District Engineer
U. S. Geological Survey
Water Resources Branch

May 24, 1951

DOCKET [illegible]-969

UNITED STATES DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

BAXTER FLUORSPAR DEPOSIT, MINERAL COUNTY, NEV.

By E. J. Matson[1], W. P. Irwin[2], and T. W. Robinson[3]

SUMMARY

The Baxter fluorspar deposit, northeastern Mineral County, Nev., has been a constant producer of high-grade fluorspar. The property, originally owned by V. S. Baxter, Fallon, Nev., has been recently optioned to H. W. Gould Co., 1000 Mills Bldg., San Francisco 4, Calif.

A loan has been requested from the Defense Minerals Administration for the purpose of securing a suitable mill, mining and milling equipment, for drilling water wells, to supply funds for development purposes and some working capital so that the production of fluorspar from the property may be increased.

The mineralized zone has been developed for a strike length of about 2,000 feet and to a depth of about 150 feet along the dip.

The property was explored in 1949 by the Bureau of Mines as a part of their program of investigation and development of domestic mineral deposits. Reference is made to the report, "Investigation of the Baxter Fluorspar Deposit, Mineral County, Nev.", which was submitted to the Washington office in March 1950.

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[1] Mining Engineer, Mining Division, Region III, U. S. Bureau of Mines.
[2] Geologist, U. S. Geological Survey.
[3] Materials Engineer, U. S. Geological Survey, Water Resources Branch.

On May 17 and 18, 1951, the property was re-examined by a Field team[1] for the purpose of determining ore reserves and water supply.

INTRODUCTION

The Barter fluorspar deposit was visited by a Field team of Region IIX in connection with the proposal made in Docket 1118-96p. The two items specifically suggested an investigation of the ore reserves on the 400-foot level of the mine and the possibility of developing an adequate supply of water for milling purposes.

GEOLOGY

W. H. Thornton[2] made a five week examination of the property in June and July, 1946 and states that "the rocks of the area are volcanic tuffs and flows, presumably of Tertiary age".

According to Mr. Thornton's report, the ore zone is in a fault breccia zone with apparent movement within the zone as indicated by deep striations and slickensides on the footwall side. Numerous small faults and small dikes are exposed but which have no known correlation or relation to ore deposition.

The ore mineralization is more or less generally confined along one major fault zone, and in which the mine development has been systematically planned. The fluorspar mineralization in the main fault zone varies in thickness considerably. It includes, pinches

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1/ E. J. [illegible], W. P. Irwin, and T. Z. [illegible].

2/ W. H. Thornton, U. S. Geological Survey, Preliminary report on the Barter Fluorspar Deposit near Trixton Hills, Nevada Strat. Min. Invest.; Prelim. - Report 3-496pp, 1946.

and small within very short distances. In some places in the mine, it will widen out from a few inches to several feet and then continue at about 1-1/2 feet for a considerable distance. Some small mineralized fissures branch out from the main zone into both the hanging and footwall side. Also in places the zone is brecciated with fluorspar enclosing fragments of country rock, however, the brecciated zones are usually too low grade to mine.

The fluorspar occurs as massive masses of almost pure CaF_2 in white to pale green and lavender and some of which is almost clear. In several places open cavities exist and botryoidal and mamillary structure of the fluorspar can be seen.

ORE RESERVES

H. W. Gould and Co. have estimated an ore reserve of 400,000 tons of fluorspar with an average grade of 90 percent CaF_2. The estimate is based on stope fills, dumps, widening of stopes and ore reserves below the 400-foot level. The over-all tonnage of minable ore appears to be a reasonable estimate.

Estimates by the USM team indicate a possible tonnage of 356,000 tons of fluorspar that will have an average grade of 49 percent CaF_2.

The southeastern portion below the 400-foot level (fig. 1) appears to be the most important and productive area from which future ore reserves can be developed. The company has taken a strike length of 750 feet and has assumed the downward extension is equal to one-half the strike length, thus forming a rectangular block 750 feet long, 375 feet wide, and 4.12 feet thick, making an estimated 99,549 tons of minable ore.

On the more conservative side, the same strike length of mineralization can be reasonably extended downward 100 feet and projected 100 feet below the point of intersection of hole 6 in the plane of the zone, as shown by figure 2, making a block of 63,200 tons of indicated ore containing 58 percent CaF_2.

Diamond drill hole 6, which was drilled during the Bureau of Mines exploration program in 1940, encountered badly fractured ground from 641 foot down. Reaming, casing, sealing and cementing, etc., would not bring back water returns. In the last interval 650 to 656 feet, only 0.1 foot of core was recovered which assayed 96.7% CaF_2. The hole was lost at this point, see report, "Investigation of Bunker Fluorspar Deposit, Mineral County, Nev." To the layman, this fluorspar content, would raise a question in valuating ore reserves due to low core recovery. However, in the mine, the fluorspar is often in powdery form, apparently due to the shearing and crushing action along the ore zone and which runs like dry granulated sugar. Where no water return was available, all this form of fluorspar would be lost. Also due to the fact that the bit was "blocked" after the 0.1 foot penetration, indicated that more fluorspar may have been penetrated. However, due to the low core recovery, the CaF_2 (96.7%) content was not taken in the ore block calculations but was used to indicate ore reserves extending below the hole as shown by figure 2.

The inferred ore can be extended for a depth of 100 feet below the indicated ore which approximates a strip of 1,008 feet long, 100 feet deep, and 3.3 feet thick, making a total of approximately 28,675 tons of inferred ore.

A lens of mill ore exists about 240 feet northwest of the shaft. This block, 100 feet long, 5 feet thick, if extended 50 feet below the level, would contain 2,800 tons of indicated ore averaging 47% CaF_2.

The total of indicated ore by H. M. Gould and Company below the 400-foot level is as follows:

Minable ore: 99,549 tons - 60.83% CaF_2

The estimated total by the IBA investigation is as follows:

Indicated ore	65,400 tons	- 58% CaF_2
Inferred ore	30,900 "	- 57% "
Total	96,300 "	- 58% "

The estimate by the IBA team checks with the H. M. Gould and Co. within reasonable limits.

In addition to the company figures, Greenan estimates 100,000 tons of inferred ore can be mined from numerous split veins and at greater depth below the 400-foot level. This figure may or may not be accurate. It is difficult to make such an estimate. However, numerous small mineralized fissures do branch out from the main zone. These can be mined to some extent and would supplement ore reserves, but any definite tonnage from these small off-shoots is difficult to estimate.

CONCLUSIONS

The property has sufficient ore reserves for the purpose of constructing a mill for the treatment of its fluorspar ore. Previous activities has been devoted solely to mining high grade and metallurgical grade fluorspar. No mill has been erected on the property.

SAMPLING AND OBSERVATION

The northwest portion of the lower or 400-foot level was observed for new development and check samples taken covering the work done by the company.

Groove cuts were made as shown by figure 1 normal to the strike and dip of the vein. A comparison of average assay results are as follows:

	Width	% CaF_2
Company	4.15	62.8
BMA Field Team	3.3	58.2

The results check very closely. Sample widths by the company and the BMA team vary slightly but either set of samples could be used as no true hanging or footwall was observed in most places. Minable widths in most cases would be much wider due to fluorspar penetration into the walls.

On the northwest side and about 470 feet from the No. 2 shaft, another check sample was taken. The BMA team sample was taken on a 5.0 foot width that analyzed 47.0% CaF_2 while the company sample was taken over a 11.0 foot width that analyzed 61.13% CaF_2. The difference here is probably due to a typographical error or possibly the company sample was taken along the strike. However, there is a good grade of mill ore in this small section.

Back-fill in the stope and dumps were not sampled at the time due to the fact that a large sample representing the stopes and dumps was sent to the Reno laboratory for metallurgical tests during the field exploration work in 1949. This composite sample averaged 38% CaF_2.

RECAPITULATION OF ORE ESTIMATES

Indicated ore	Tons	% CaF_2
Dumps	24,000	40
Stope fills	80,000	38
Pillars above 400-foot level	83,200	50
8-foot thickness of wall zone above 400-foot level	82,500	50
Southwest of shaft	63,300	58
Northeast of shaft	2,200	47
Total	275,100	47

Inferred ore	Tons	% CaF_2
Southwest of shaft	28,700	58
Northeast of shaft	2,300	47
Split veins and small lenses, and greater depth below 400-foot level	50,000	50
Total	80,000	53
Grand Total	356,000	49

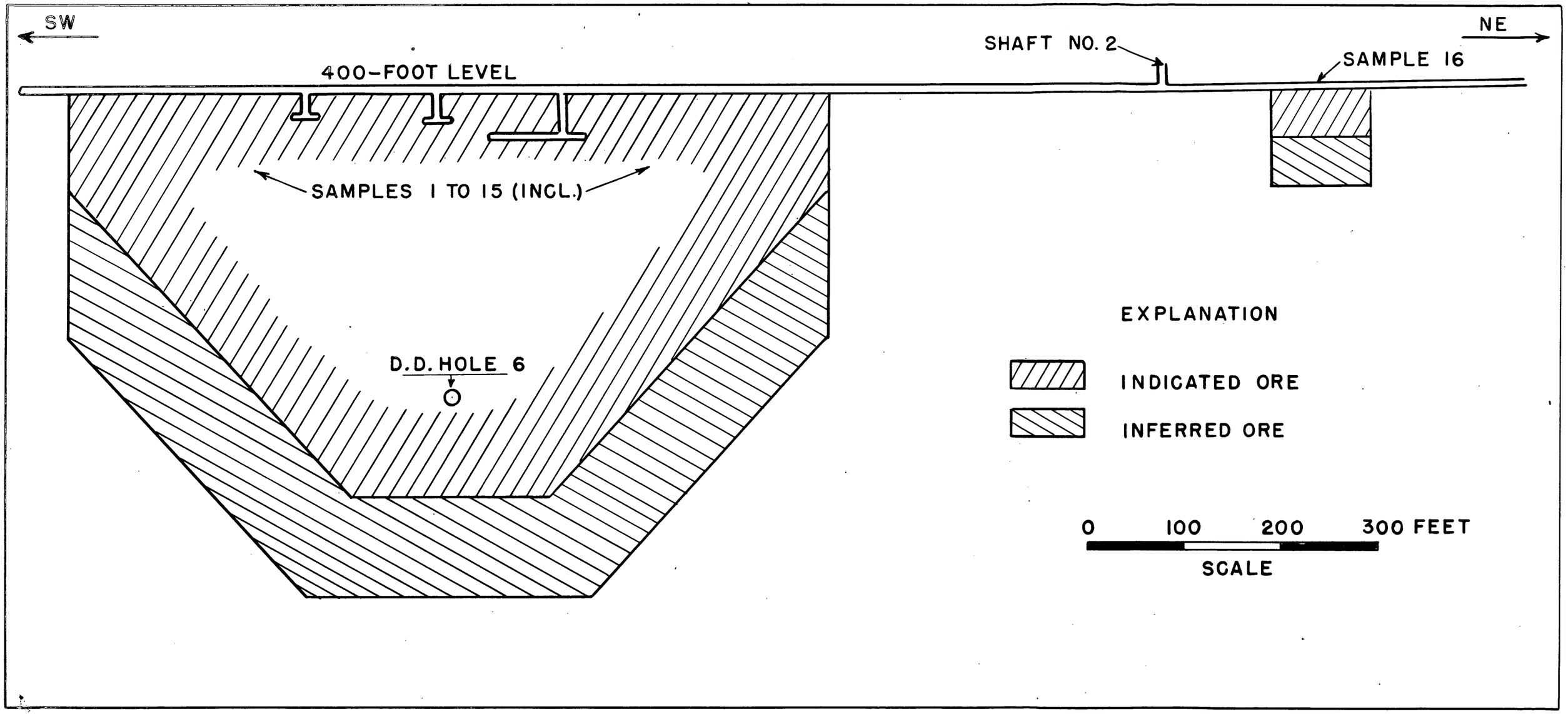

FIG. 2,— SHOWING ORE BLOCKS BELOW 400-FOOT LEVEL, BAXTER FLUORSPAR DEPOSIT, MINERAL COUNTY, NEV.

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMA-969, Baxter Fluorspar Mine

Mineral County, Nevada

Edward J. Matson
U. S. Bureau of Mines

William P. Irwin
U. S. Geological Survey

May 23, 1951

ORE RESERVES

The estimated ore reserves submitted by H. W. Gould and Co. appear in general to be of a reasonable order of magnitude and grade, although several items warrant comment. The following discussion of ore reserves is in large part a reclassification of the estimated reserves to conform with the terminology used by the Bureau of Mines and Geological Survey. The applicant reports 309,212 tons of assured ore with an average grade of 49.986 percent CaF_2, and 100,000 tons of inferred ore with an average grade of 49.987 percent CaF_2. As a result of the present field examination, the ore reserves are estimated to be 247,163 tons of indicated ore with an average grade of 45.5 percent CaF_2, and 107,100 tons of inferred ore with an average grade of 49.8 percent CaF_2.

The 400-foot level drifts along the continuation of two ore shoots that have been worked in the upper levels of the mine. The larger of the ore shoots is southwest of shaft no. 2, and is referred to in section 4 on page 12 of the applicant's report. It is 830 feet long with an average thickness of 44 feet, and is opened below the 400-foot level by three winzes (see map). The three winzes are spaced at approximately 135-foot intervals along the ore shoot, and, from north to south, are 45 feet, 33 feet, and 28 feet deep, respectively. At the bottoms of the winzes the ore shoot shows no sign of decreasing in thickness or grade.

The probable extension of the same ore shoot was intersected by diamond-drill hole no. 6 at a vertical distance of 256 feet below the 400-foot level. Only a few inches of core was recovered during the last 6 feet of drilling. The few inches of core assayed 96.66 percent CaF_2. On pages 7, 8, and 10 of the applicant's report, the importance of diamond-drill hole no. 6 in showing the extension of the larger ore shoot is stressed. The entire last 6 feet of rock drilled is interpreted to have assayed 96.66 percent CaF_2. On the basis of this interpretation the applicant has calculated a large tonnage of assured ore between the 400-foot level and drill hole, and a large tonnage of inferred ore between the drill hole and 1,000-foot level. Although the ore shoot probably extends to the depth of the diamond-drill hole, no reliable data is available as to the length, thickness, and average grade of the ore at that depth. Extension yet further to the 1,000-foot level does not seem warranted.

The assays of the samples taken of the ore shoot southwest of shaft no. 2 on the 400-foot level are not representative of the general grade of that ore shoot because at most places the drift exposes only the footwall and central portion of the ore shoot. The central portion of the ore shoot generally contains a zone of almost pure fluorite, whereas the footwall and hanging wall portions contain a large percentage of brecciated andesite. As the applicant plans to mine the entire thickness of the ore shoot, the reported weighted average grade of 60.83 percent CaF_2 is higher than the average grade of the ore that is to be mined. The average grade of the ore shoot is estimated to be approximately 50 percent CaF_2.

The ore shoot southwest of shaft no. 2 probably can be safely extended to a depth of at least 100 feet below the 400-foot level with about the same thickness and grade, considering that about half of that depth is opened by winzes with no apparent decrease in thickness and grade of the ore shoot. Assuming a length of 830 feet, a thickness of 4.4 feet, a dip of 60 degrees, and 12 cubic feet of ore per ton, the block of ground between the 400- and 500-foot levels southwest of shaft no. 2 contains 35,000 tons of indicated ore with a grade of about 50 percent CaF_2. The block of ground between the 500-foot level and the level of diamond-drill hole no. 6 contains 54,600 tons of inferred ore with a grade of about 50 percent CaF_2.

The smaller ore shoot on the 400-foot level is northeast of shaft no. 2 (see map). It is 178 feet long with an average thickness of 2.9 feet. The applicant reports an assay of 61.13 percent CaF_2 over a width of 11 feet (see page 8 of applicant's report). At no place was the ore shoot observed to be more than 6 feet thick. The average grade of the ore shoot is lower than that of the larger ore shoot, and is estimated to be approximately 40 percent CaF_2. Between the 400- and 450-foot level the ore shoot contains 2,500 tons of indicated ore with an estimated grade of 40 percent CaF_2. The block of ground between the 450- and 500-foot level contains 2,500 tons of inferred ore with an estimated grade of 40 percent CaF_2.

The tonnage and grade of ore that constitutes the dumps, stope fills, pillars, and unmined hanging-wall zone in the workings above the 400-foot level, is difficult to estimate closely. The estimates on page 11, items 1, 2, and 3, of the applicant's report are in reasonable agreement with the data observed in the field, and are used in the tabulation of ore reserves in this report.

Inferred ore is estimated to be 100,000 tons on page 11, item 5, of the applicant's report. Part of it is extrapolated from many small, widely-separated underground and surface exposures, but the larger part seems to be the extension of the ore shoot on the southwest side of shaft no. 2 to a depth of 1,000 feet. Extension to that depth does not seem warranted by the present degree of development. A more reasonable estimate under item 5 is 50,000 tons of inferred ore with an estimated grade of 50 percent CaF_2.

Summary of ore reserves

Indicated ore

Location	Tons	Percent CaF_2
Dumps.....	24,000	40
Stope fills.....	80,000	38
Pillars above 400-foot level.....	23,193	55
Two-foot thickness of wall zone above 400-foot level.....	82,470	50
Southwest of shaft no. 2 between 400- and 500-foot level.....	35,000	50
Northeast of shaft no. 2 between 400- and 450-foot level.....	2,500	40
Total.....	247,163	45.5% CaF_2

Inferred ore

Location	Tons	Percent CaF_2
Southwest of shaft no. 2 between 500-foot level and DDH no. 6...	54,600	50
Northeast of shaft no. 2 between 450- and 500-foot level.....	2,500	40
Ore in split veins, Barnett fault, and possible extensions of ore to northeast and southwest of present workings.....	50,000	50
Total.....	107,100	49.8% CaF_2

Total indicated and inferred ore is 354,263 tons with an average grade of 46.8 percent CaF_2.

Refer to	Noted	Date
	IIEW	7/12
Answered		

July 12, 1951

Mr. P. M. Ambrose, Chief
Minerals Technology Division
Region 8, Bureau of Mines
College Park, Maryland

Subject: DMA-969; fluorspar
Fallon Fluorspar Mines, Inc.
Baxter Fluorspar Mine,
Mineral County, Nevada

My dear Mr. Ambrose:

With reference to the discussion which you and Mr. Woodard had with Mr. I. E. Weber of the DMA on July 11, 1951, on fluorspar concentrates from the Baxter Fluorspar Mine, I appreciate that this mine is in the Region III area.

Region III has given us an opinion on the ore reserves at the Baxter Fluorspar Mine and I thought time would be saved in asking your opinion on the proposed milling and so expedite the processing of this application.

I would therefore appreciate your letting us have your opinion on the Western Machinery Company's report on Heavy Media Separation and the Gallagher Company's report on flotation of the Baxter Fluorspar Mine ores and the feasibility of these processes producing satisfactory grades of both metallurgical and acid fluorspar concentrates.

Sincerely yours,

James A. Barr, Sr., Chief
Industrial Minerals Branch

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
COLLEGE PARK, MARYLAND

Refer to

Answered

July 13, 1951

James A. Barr, Chief
Industrial Minerals Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Subject: DMA-969; fluorspar
Fallon Fluorspar Mines, Inc.
Baxter Fluorspar Mine
Mineral County, Nevada

Dear Mr. Barr:

Reference is made to your letter of July 12, 1951 requesting an opinion on the reports of the Western Machinery Company and the Gallagher Company covering the treatment of the Baxter Fluorspar Mine ores, and the feasibility of the processes described of producing satisfactory grades of both acid and metallurgical fluorspar.

The report written by the Western Machinery Company describing the heavy medium separation tests showed that this method of separation could be employed to produce satisfactory grade of metallurgical fluorspar from the freshly mined Baxter Mine ore.

Although it was stated that two tests were made on the dump material no results of those tests were reported. It was indicated that excessive viscosity of the heavy medium was caused by the extreme friability of the ore and this difficulty would be corrected in full scale operation by the use of medium cleaning apparatus. However, in the absence of more conclusive data on the treatment of the dump ore by heavy medium separation, the success of such treatment appears to be still open to question.

The Gallagher Company report which describes flotation tests on the ores show that a satisfactory grade of acid fluorspar can be produced from the freshly mined Baxter Mine material. That section of the report covering the treatment of the dump ore shows that a satisfactory grade of acid fluorspar can be produced from the dump material by methods used in tests 1, 2, and 3. The tests 4, 5, and 6 produced concentrates too high in silica to meet stock pile specifications.

The only major difference in methods employed was in fineness of grind and therefore it could be concluded that by proper adjustment of grinding methods the dump ore can be floated successfully to produce acid grade fluorspar.

Other than the friability of the dump ore which caused trouble in the heavy medium tests, both reports indicate that the Baxter Mine ore is easily treated by standard practice to produce satisfactory grades of both metallurgical and acid fluorspar.

Very truly yours,

P. M. Ambrose, Chief
Minerals Technology Division
Region VIII

aoe

cc: H. P. Greenwald, Pittsburgh
H. C. Miller, San Francisco
J. B. Zadra, Reno, Nevada
F. D. Lamb
C. P. Files

July 9, 1951

Mr. James A. Barr, Sr., Chief
Industrial Minerals Branch
Defense Minerals Administration
Room 3538
South Interior Bldg.
Washington 25, D. C.

Re: Baxter Fluorspar
Docket DMA-969

Dear Mr. Barr:

This will confirm telephone conversation on July 9 with Mr. I. E. Webber relative to mining and qualifications of Mr. M. J. O'Boyle, Superintendent of the Baxter Fluorspar Mine for H. W. Gould and Company.

The Baxter Fluorspar deposit has been developed along a strike length of about 2,000 feet by 5 shafts. Mr. Baxter in his mining operations shipped only the higher grade ore and used the lower grade material for fills. The H. W. Gould and Company plan on mining the fills and slabbing some of the walls that contain considerable fluorspar by open stope mining, using stulls and head boards. The walls at the mine stand well and in all likelihood their method of mining can be accomplished successfully.

I have known Mr. O'Boyle for approximately thirty years. He is a graduate mining engineer and a competent mine operator. He has had several years experience in different methods of mining for the United Verde Company at Jerome, Arizona, in the operating department, as well as several years of mine experience in other mines in the southwest. For the past several years he has been General Superintendent for the H. W. Gould and Company. The H. W. Gould and Company own several mines in California that have been operated successfully. They have a very good reputation as mine operators.

Mr. Webber stated that they did not have a report on the Bureau's investigation of the Baxter Fluorspar Mine in the Washington Office. The Bureau of Mines conducted a drilling program on this deposit and a copy of the report is enclosed, for your information. When it has served your purpose, it will be appreciated if it is returned to the Mining Division in Reno, Nevada.

Very truly yours,

A. C. Johnson, Chief
Mining Division, Region III

cc: Regional Dir., Reg. III

Encl.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Box 327
Carson City, Nevada

June 11, 1951

Mr. A. C. Johnson
Reno Branch, Bureau of Mines
Minerals Division
Reno, Nevada

Dear Mr. Johnson:

Reference is made to Docket DMA-969 concerning the report made for water supply for the Baxter Flourspar Mine which was transmitted to you through messenger on May 24, 1951. Because of the emergency of this report, it was not cleared through the Director of the Geological Survey.

In instances of this kind, I should like to call your attention to the fact that the report is not to be released by your agency for outside use until approval by our Director.

Very truly yours,

T. W. Robinson

T. W. Robinson
District Engineer GW

Answered by telephone by Mr. Johnson 6/13/51

May 29, 1951

Memorandum

To: Tom Lyon, Chairman, Coordinating Committee, Defense Minerals Administration, Washington, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: Application of
H. W. Gould & Company
Fluorspar Division
1000 Mills Building
San Francisco, Calif.

Re: Docket DMA-969

Commodity: Acid-grade and metallurgical-grade fluorspar.

Reference is made to your subject memorandum dated April 12.

The Region III Field Team has completed its examination of the Baxter Fluorspar Mine, Mineral County, Nevada, in connection with the proposal made by the applicant company.

Attached are four copies each of the following reports:

(1) DMA-969, Baxter Fluorspar Mine, Mineral County, Nevada, by Edward J. Matson, U. S. Bureau of Mines, and William P. Irwin, and T. W. Robinson, Geological Survey, dated May 24, 1951.

(2) DMA-969, Baxter Fluorspar Mine, Mineral County, Nevada, by William P. Irwin, Geological Survey, dated May 23, 1951.

(3) Ground-Water Supply for the Proposed Mill at Baxter Fluorspar Mine, Mineral County, Nevada (Docket DMA-969), by T. W. Robinson, District Engineer, Geological Survey, Water Resources Branch, dated May 24, 1951.

Report (1) above is a combined report by the Geological Survey and Bureau of Mines' members of the Examining Field Team. It was prepared in Reno by Bureau of Mines' Engineers without the Survey Representative present, and the slight difference between the ore reserves estimates by the representatives of the two agencies could not be reconciled in time to get the report out on schedule.

Report (1) indicates 63,200 tons of indicated ore southwest of shaft No. 2, between the 400 and 500-foot levels, whereas in the Geological report (2) the estimate is 35,000 tons. As for inferred ore, the Bureau of Mines estimates (1) is 28,700 tons, whereas the Survey's figure (2) is 54,600 tons. The total of indicated and inferred ore is 356,000 tons, according to the Bureau of Mines Engineer, and 354,263 tons, according to the Survey's Geologist.

It was not considered advisable to hold up the report to attempt to get unanimity of opinion as to whether the difference of about 26,000 to 28,000 tons of ore is indicated or inferred ore, as the total of all ore , as estimated by the Gould Company, Bureau of Mines and Geological Survey check reasonably close.

A. G. Johnson, Chief, Region III, Mining Division, Reno, agrees with the tonnage estimate as given in the combined report (1) on the 400-foot and below the 400-foot level. Nevertheless, in fairness to the Survey, I am attaching William P. Irwin's report so that you in Washington can check both interpretations should you desire to do so. In any event, there seems to be sufficient ore reserves in the Baxter Fluorspar Mine to warrant the loan for further production from that property.

The third report, by T. W. Robinson, outlines his thoughts regarding the possibility of developing new water within the area of the mine. According to Robinson, a most favorable area to prospect for water appears to be in the alluvium of the dry wash that drains the north end of Gabbs Valley in an area approximately three miles from the mine.

DMA Docket 969 is being returned herewith.

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

P. S. In order to expedite the handling of this application, Mr. Bruce Gould of H. W. Gould and Company is delivering this docket to Washington in person.

HGMiller:ejs
Chrono
Files

cc. Ward Smith

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
P. O. Box 1551
Reno, Nevada

Refer to	Noted	Date
Answered		

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
MAY 2 5 1951
SAN FRANCISCO, CALIFORNIA

May 24, 1951

Memorandum

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

From: Chief, Mining Division, Region III

Subject: Docket DMA-969 - Baxter Fluorspar Mine, Mineral Co., Nev.

Enclosed are five copies of Docket DMA-969, Baxter Fluorspar Mine, Mineral County, Nev. I am also enclosing four copies of the report that was made by William P. Irwin.

The ore estimates by Mr. Matson and Mr. Irwin are pretty well in agreement. The ore estimates made by H. W. Gould and Co. and DMA team are also fairly well in agreement. The H. W. Gould and Co. estimate that they have approximately 400,000 tons of ore that will average about 50 percent CaF_2. The DMA teams estimate is approximately 362,000 tons of 49 percent CaF_2.

A copy of a report on the Ground Water Supply for the proposed mill at Baxter by T. W. Robinson, District Engineer, is also included.

I am in agreement with Mr. Matson in his method of estimating ~~inferred~~ ore on the 400- and below the 400-foot level at the Baxter mine. This was one of the points that was questioned by the Chairman of the coordinating committee.

There seems to be sufficient reserves to warrant the loan for further production from this property.

The memorandum that you gave me from Tom Lyons is being returned herewith.

A. C. Johnson

A. C. Johnson

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

May 23, 1951

Subject: DMA-969, Baxter Fluorspar Mine, Mineral Co., Nevada

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

Dear Ed:

Enclosed is a copy of my part of the Baxter Fluorspar report, and a tracing of the 400-foot level of the mine. You will note that in calculating ore reserves I have reduced the average grade of the ore, sampled by the applicant over only a portion of the entire thickness of the ore shoot, to conform to the grade of the ore across the entire thickness of the ore shoot. Actually I think that we can arrive only at an approximate grade of the bulk ore, considering that we could not sample the entire thickness of the ore shoot. If the results of your sampling differ markedly from those of the applicant's, please return the report and I will recalculate the reserves to conform to the results of your sampling.

The enclosed tracing shows the limits of the two ore shoots on the 400-foot level. The average thickness along a given length of an ore shoot is shown by numbers with corresponding brackets. I assume that you are preparing an assay map, and believe it would be a good idea to transfer the data from the enclosed tracing to your map.

Thanks again for your generous hospitality while I was in Reno. Please give my very best regards to Mrs. Matson.

Sincerely yours,

Pat

William P. Irwin

Enclosures (2)

CC: H. C. Miller

P.S. Am also enclosing the geologic map I borrowed from your files P.

P. O. Box 1551
Reno, Nevada

May 23, 1951

Mr. W. P. Irwin
U. S. Geological Survey
102 Old Mint Bldg.
5th and Mission Sts.
San Francisco 3, Calif.

Dear Mr. Irwin:

Enclosed are two prints of the Baxter fluorspar deposit, showing assays and ore blocks, respectively, below the 400-foot level. The average assays come pretty close to the company average. The D.M.A. shows an average of 58.2 percent CaF_2 for an average width of 3.3 feet while the company assays for the same area show 62.8 percent CaF_2 for an average width of 4.2 feet. Mr. Matson has completed his part of the report and as soon as your part of the report is received, it will be assembled and forwarded to Mr. Miller's office.

Yours very truly,

A. C. Johnson, Chief
Mining Division
Region III

J. B. Zadra

E. J. Matson

DMA-969 (Baxter Fluorspar)

5/21/51
P. O. Box1551
Reno, Nevada

The following samples will be delivered to the PLANT on the above date:

	Sample No.	Width	
74.9	1	4.5'	NW face of sub-drift in winze below chute #18
59.9	2	4.0'	NE face " " " " " " " #13
47.5	3	3.5'	NE " " " " " " " " #8
16.0	4	2.0	NE " " " " " " " " #8
60.4	5	4.5'	10' NE " Chute #26, main drift
69.1	6	3.5'	10' " " " #23 " "
57.6	7	6.0	10' " " " #21 " "
71.9	8	3.5'	10' " " " #19 " "
55.5	9	3.0'	10' " " " #16 " "
61.1	10	4.9'	10' SW " " #14 " "
13.7	11	5.5'	midway between chutes #11 & #12, main drift
74.6	12	2.0'	10' NE of chute #9, main drift
78.4	13	5.0'	3' SW " " #5 " "
67.3	14	5.0'	12' SW " " #3 " "
66.1	15	3.0'	5' SW " " #1 " "
47.0	16	5.0'	10' SW " " #3 " " (NE side of shaft)

Please assay the above for CaF_2

E. J. Matson

cc A. C. Johnson
Files

E. J. Matson

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
RARE AND PRECIOUS METALS EXPERIMENT STATION
METALLURGICAL DIVISION Hydrometallurgical and Ore-Dressing Branch RENO, NEVADA
Box D, University Station
Region III

May 22, 1951

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

Project No. Matson

D.M.A. 969 (Baxter Fluorspar)

Sample No.	%,CaF_2
1	74.9
2	59.9
3	47.5
4	16.0
5	60.4
6	69.1
7	57.6
8	71.9
9	55.5
10	61.1
11	13.7
12	74.6
13	78.4
14	67.3
15	60.1
16	47.0

J. B. Zadra
Supervising Engineer

cc: A. C. Johnson

1-1027
(April 1946)

UNITED STATES
DEPARTMENT OF THE INTERIOR

AGENCY ~~Bureau of Mines~~

PBS TELETYPE

Originator:
Ext.: ~~264~~ Room: ~~1415~~

Appro.: Bureau of Mines, San Francisco
Date: May 21, 1951
Time:
No.:
To: Mr. James A. Barr, Senior Chief, Industrial Minerals Branch, DMA, Interior Building, Washington, D. C.
Subject:

Reurtel May 18 Docket 969 received May 11. Field crew examined mine May 17 and 18. Report will be completed shortly.

H. C. Miller

AJRenner:wmk

Files
Chrono.

Authorized:

H.C. Miller
Regional Director, Region III

Sign original message and transmit to Room ..... in duplicate

U. S. GOVERNMENT PRINTING OFFICE 16—50915-1

999.530.02

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

Department of Interior
FROM Defense Minerals Administration
Industrial Minerals Branch
BUREAU #14-1110037 - Expense of Defense
Production Administration, Executive
CHG. APPROPRIATION Offices of the President
(Allotment to Interior, 1951)
10.0

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Refer to	Noted	Date
	HWM	8/24
Answered		

May 17, 1951

H. C. MILLER
1415 Appraisers Bldg.
San Francisco, California

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
MAY 23 1951
SAN FRANCISCO, CALIFORNIA

REURTEL MAY NINE HAVE YOU RECEIVED DMA DOCKET NINE SIX NINE?

James Barr JAB

James A. Barr, Sr. Chief
Industrial Minerals Branch
Defense Minerals Administration

CONFIRMATION

1-1027
(April 1946)

UNITED STATES
DEPARTMENT OF THE INTERIOR

AGENCY Bureau of Mines

PBS TELETYPE

Originator:
Ext.: 2264 Room:

Appro.: Bureau of Mines, San Francisco
Date: May 9, 1951
Time: 2:50 p.m.
No.:

1415 Appraisers Bldg.
San Francisco, Calif.

To: Olaf N. Rove, Chief, Mineral Deposits Branch, Defense Minerals Administration, Interior Building, Washington, D. C.

Subject:

Reurtel May 1 concerning DMA Docket 969 Baxter Fluorspar Mine. Docket supposedly mailed from Washington April 30 has not yet arrived.

H. C. Miller
Regional Director, Region III

Authorized:

H. C. Miller

HCMiller:am
Files
Chrono

Sign original message and transmit to Room ..... in duplicate

U. S. GOVERNMENT PRINTING OFFICE 16—50915-1

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED
MAY 2 1951
SAN FRANCISCO, CALIFORNIA

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

April 30, 1951

Air Mail

Subject: DMA-969, Baxter fluospar mine, Mineral County, Nev.

Refer to	Noted	Date
	Alice	
Answered		

Mr. Olaf N. Rove
Mineral Deposits Branch
Geological Survey
Washington 25, D. C.

Dear Olaf:

This is to confirm the message about the Baxter fluospar mine, Mineral County, Nevada, relayed by Lois Williams when I took advantage of having her on the phone today.

The main message was an appeal from the Gould Company, which proposed a loan, for news as to the stage reached by their docket. Time is of the essence, because they have under option certain used machinery as well as the property itself, and have a working crew lined up, partly on payroll. I promised that I would try to get a message to Hal Miller, reporting where the docket might be in the machinery of DMA. I hope you or Van Alystyne were able to stimulate a wire to Miller.

Second, I asked about your letter of April 13, which referred to an attached note that was not attached. We anticipated receiving the docket shortly after your letter, but have received nothing. The attachment concerned the Ground Water geologist, Robinson, probably a member of the office at Carson City.

Sincerely yours,

Ward Smith

CC: H. C. Miller

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

1201

(30)..

W. P. MARSHALL, PRESIDENT

SYMBOLS
DL = Day Letter
NL = Night Letter
LC = Deferred Cable
NLT = Cable Night Letter
Ship Radiogram

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

OA125 WM56 1951 MAY 1 AM 10 49

W. IDA042 GOVT PD= ID WASHINGTON DC 1 126P=

HAROLD C MILLER=

1415 APPRAISERS BLDG SFRAN

=D.M.A. DOCKET 969 BAXTER FLUORSPAR MINE MINERAL COUNTY NEVADA SENT YOU YESTERDAY

OLAF N ROVE CHIEF MINERAL DEPOSITS BRANCH=

WELL

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Richard

You might discuss this memo from Rose with Ward Smith when he returns and find out if Ward knows what to do about it. He may know Robinson (Bateman + Bailey didn't) and wish to discuss the problem with him.

HELM

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

DEPARTMENT OF INT...
BUREAU OF MINES
REGION III
RECEIVED
APR 17 1951
SAN FRANCISCO, CALIFORNIA

APR 13 1951

Refer to	Noted	Date
	Miller	
Answered		

Memorandum

To: C. L. McGuinness, Ground Water Branch

From: Olaf N. Rove, Acting Assistant Chief Geologist

Subject: Water supply problem mentioned in Docket DMA-969.

Installation of proposed sink-float and flotation plants at the Baxter fluorspar mine, Mineral County, Nevada, depends upon the discovery of an adequate water supply. As the applicant for government assistance stated that a preliminary examination and study of the geology, drainage, etc. of an area about one mile from the mine and proposed millsite have been made by Mr. Thomas W. Robinson, Ground Water Division, U. S. Geological Survey, Mr. Harold C. Miller or Mr. Ward C. Smith of the Region III Field Team probably will want the water supply problem discussed with him. The field team is being sent Mr. Robinson's address (see copy of attached memorandum addressed to Mr. Miller).

no memo attached

Olaf N. Rove
Acting Assistant Chief Geologist

copy to: H. C. Miller

Refer to	Noted	Date
Answered		

DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
RECEIVED
MAY 11 1951
SAN FRANCISCO, CALIFORNIA

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

April 12, 1951

Memorandum

To: Harold C. Miller, Executive Officer of Field Team, Region III

From: Coordinating Committee

Re: Docket DMA-969

Subject: Application of
H. W. Gould & Company
Fluorspar Division
1000 Mills Building
San Francisco 4, California

Commodity: Acid-grade and metallurgical-grade fluorspar

Will you please have the Field Team of Region III make an examination of the Baxter fluorspar mine, Mineral County, Nevada, about 70 miles southeast of Fallon, Nevada, in connection with the proposal made in the enclosed DMA file No. 969. Two items that specifically should be investigated are the ore reserve estimates (see p. 11 of applicant's report) and the chances of finding an adequate water supply nearby for the proposed mill (see p. 22 of applicant's report).

The Geological Survey and the Bureau of Mines investigated the Baxter mine, the source of the fluorspar that would be purchased by the government, during and shortly after the recent war. As the additional ore found on the 400-foot level of the mine since then accounts for more than one-quarter of the applicant's estimated reserves, that part of the mine should be examined especially. A copy of the Geological Survey's report on the Baxter mine has been attached to the data submitted by the applicant.

The installation of the proposed sink-float and flotation plants depends upon the discovery of an adequate water supply. As the applicant mentions (see p. 22 of report) that a preliminary examination and study of the geology, drainage, etc. of an area near the mine and proposed millsite has been made by Thomas W. Robinson, Ground Water Division, U. S. Geological Survey, the water supply problem should be discussed with him. His address is P. O. Box 327, Carson City, Nevada, and his office is in the Ormsby County Court House there.

Tom Lyon
Chairman

Approved.

Lowell B. Moon
Member, Bureau of Mines

Copy followed Smith 5/14

T. P. Thayer
Member, Geological Survey

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

April 12, 1951

Memorandum

To: Harold C. Miller, Executive Officer of Field Team, Region III

From: Coordinating Committee Re: Docket DMA-969

Subject: Application of
H. W. Gould & Company
Fluorspar Division
1000 Mills Building
San Francisco 4, California

Commodity: Acid-grade and metallurgical-grade fluorspar

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Tom Lyon
Chairman

Approved:
Lowell B. Moon
DMA

Member, Bureau of Mines
~~Olaf N. Rove~~

Member, Geological Survey

REVan Alstine:jeh
G-4/21/51

copy to: Van Alstine
Davis
Josephson
Norton
Files
Field Team, Region III

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

April [illegible], 1951

Ref: Docket [illegible]-969

[illegible] Company
Placer Division
[illegible] Building
San Francisco [illegible], California

Gentlemen:

Your application for government assistance ([illegible]-969), at your Water Canyon property, Mineral County, Nevada, has been reviewed. The application has been referred to Mr. Harold [illegible] Miller, Executive Officer of Field Team, Region III, 1215 [illegible] Department's Building, San Francisco 11, California, for additional advice and information.

Sincerely yours,

Ken Lyon, Director
Supply Division

Nolan Altinostjeh
[illegible]-4/[illegible]/51

copy to: Van Alstine
Davis
Donaghson
Norton
Barr
2 copies to Field Team, Region III
Files

SUTTER 1-5954

CABLE: "CINNABAR"

H. W. GOULD & CO.

MINING & METALLURGICAL ENGINEERS

1000 MILLS BUILDING

SAN FRANCISCO 4, CALIFORNIA

Baxter Fluorspar

March 10th, 1951

A. C. Johnson, Chief
Mining Division, Region III
Bureau of Mines
P. O. Box No. 1551
Reno, Nevada

Dear Mr. Johnson:

Thank you very much for your letter of March 8th in which you advised that you are sending along six copies of the topographic map of the Baxter fluorspar property. I hope this hasn't been too much of an inconvenience for you and want to say that I certainly appreciate your kind cooperation.

I also note that you do not believe it will be necessary for the Bureau or Survey to make another examination of the Baxter fluorspar property, and I hope this is true as it will expedite my plan and program in Washington very much.

Very truly yours,

H. W. GOULD & CO.

B. A. Gould

B. A. Gould

BAG:es

Mining Division
Region III

Nevada - California

P. O. Box 1551
Reno, Nevada

March 8, 1951

Mr. B. A. Gould,
H. W. Gould & Co.,
1000 Mills Bldg.,
San Francisco 4, Calif.

Dear Mr. Gould:

This will acknowledge your letter of March 7 requesting 6 copies of the topographic map of the Baxter fluorspar property.

In compliance with your request, there is being mailed under separate cover 6 copies of the topographic map of the Baxter fluorspar property.

The work on the Baxter fluorspar property has been done by the Bureau of Mines and I do not believe that it will be necessary for another examination to be made by the Bureau of Mines and the U. S. Geological Survey relative to a loan from the RFC and DMA on the Baxter fluorspar property as they have all the information on this property in their files in Washington.

Very truly yours,

A. C. Johnson, Chief
Mining Division
Region III

SU[illegible] 1-5954

CABLE: "CINNABAR"

H. W. GOULD & CO.

MINING & METALLURGICAL ENGINEERS

1000 MILLS BUILDING

SAN FRANCISCO 4, CALIFORNIA

March 7th, 1951

A. C. Johnson, Chief
Mining Division
Region III, Bureau of Mines
Box No. 1551
Reno, Nevada

Dear Mr. Johnson:

Thank you very much for so promptly sending along to us the copies of sections of drill holes that were drilled by the Bureau of Mines on the Baxter fluorspar property.

I would like to bother you just once more and that is in respect to asking you if you could send me six white prints of the topographic map of the Baxter property which also indicates the location of buildings and the diamond drill holes. Thank you very much for your courtesy in this matter.

It is my plan to leave for Washington about March 14th, the idea being to try to secure funds from D.M.A. or R.F.C. to cover the cost of mining and milling facilities, etc. I believe the procedure in a case like this is that as soon as such an application is filed, then it is very shortly referred to the Bureau of Mines after which field men of the Bureau and Survey check the claims of the applicant. If this is true, could you tell me whether you would have a man available in the very near future who could do this checking so that the whole matter of the application could be somewhat expedited?

Thank you for your early reply.

Yours very truly,

H. W. GOULD & CO.

B. A. Gould

B. A. Gould

BAG:es

Mining Division
Region III

Nevada - California

P. O. Box 1551
Reno, Nevada

March 5, 1951

H. W. Gould & Co.,
1000 Mills Bldg.,
San Francisco 4, Calif.

Dear Mr. Gould:

Mr. James O. Greenan of Reno, Nevada, telephoned me this morning, stating that your company would appreciate 4 copies of section of drill holes that were drilled by the Bureau of Mines on the Baxter fluorspar property.

In compliance with his request, these copies are enclosed herewith.

Very truly yours,

A. C. Johnson, Chief
Mining Division
Region III

Enclosures (7 sets)

Mining Division
Region III

Nevada - California

P. O. Box 1551
Reno, Nevada

February 5, 1951

Thomas W. Robinson
United States Geological Survey
Ground Water Division
Courthouse
Carson City, Nev.

Dear Mr. Robinson:

This will confirm my telephone conversation to you on February 3 relative to the Ground Water Division of the U. S. Geological Survey being of some assistance on the possible location of a well for the Baxter fluorspar property in northeastern Mineral County, Nev.

The H. W. Gould and Company of San Francisco have a lease and option on this property and they plan on erecting a 200-ton mill for the purpose of beneficiating low grade fluorspar from the Baxter property.

Fluorspar at the present time is needed in the Defense program in the steel industry and also for chemicals. Any assistance that your department could give this company would aid in the defense program.

Very truly yours,

A. C. Johnson, Chief
Mining Division
Region III

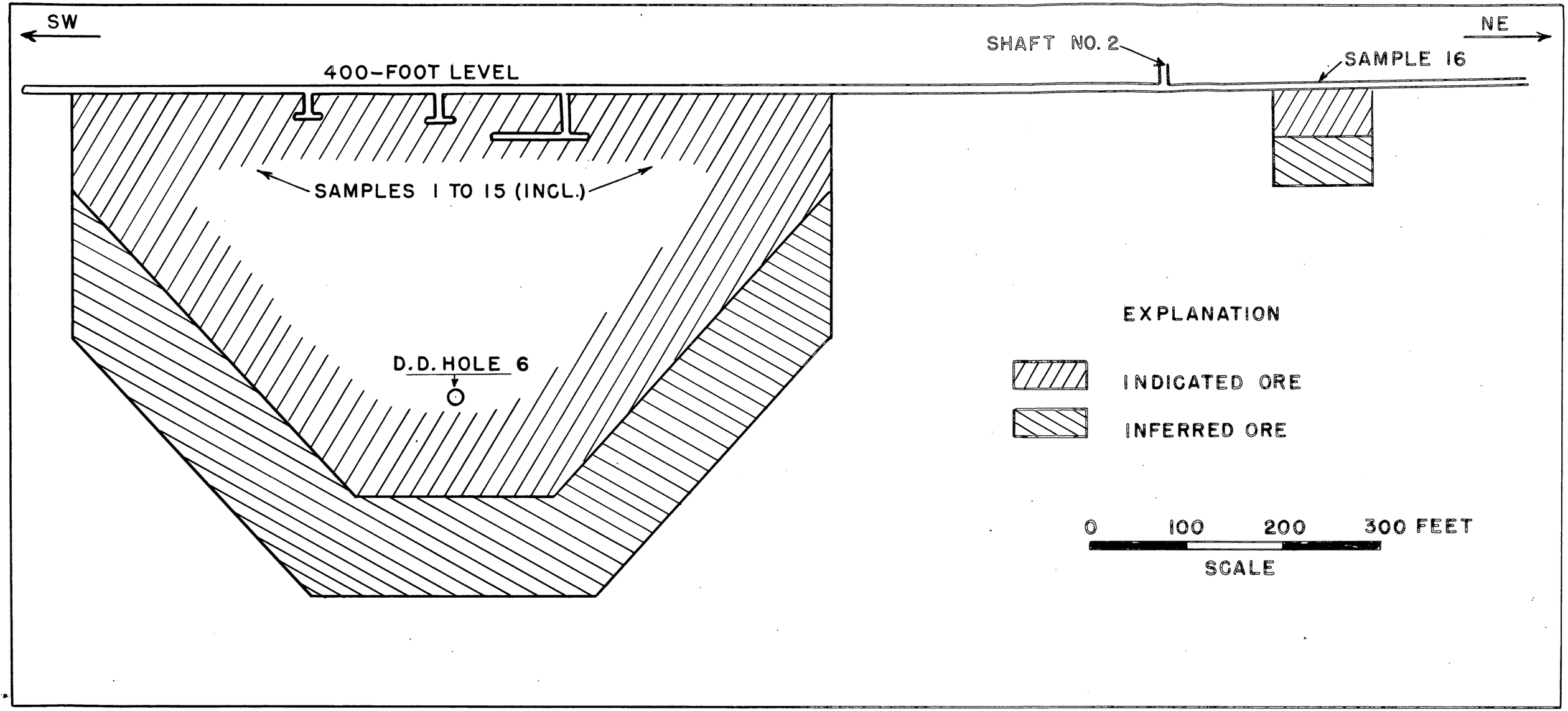
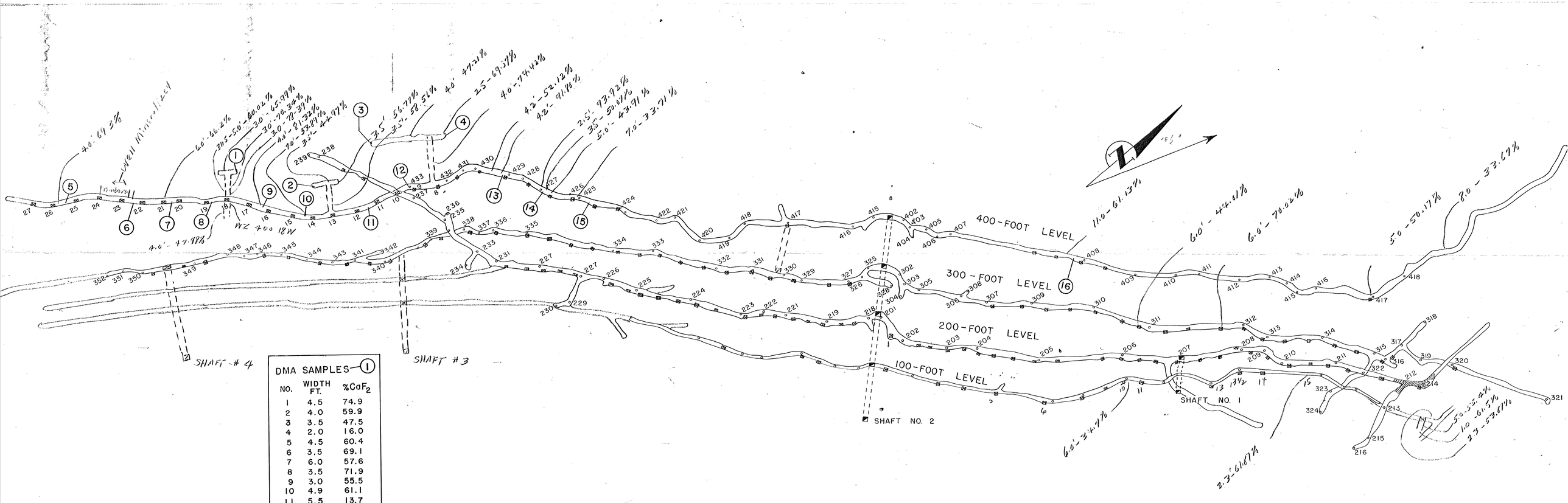


FIG. 2,— SHOWING ORE BLOCKS BELOW 400-FOOT LEVEL, BAXTER FLUORSPAR DEPOSIT, MINERAL COUNTY, NEV.



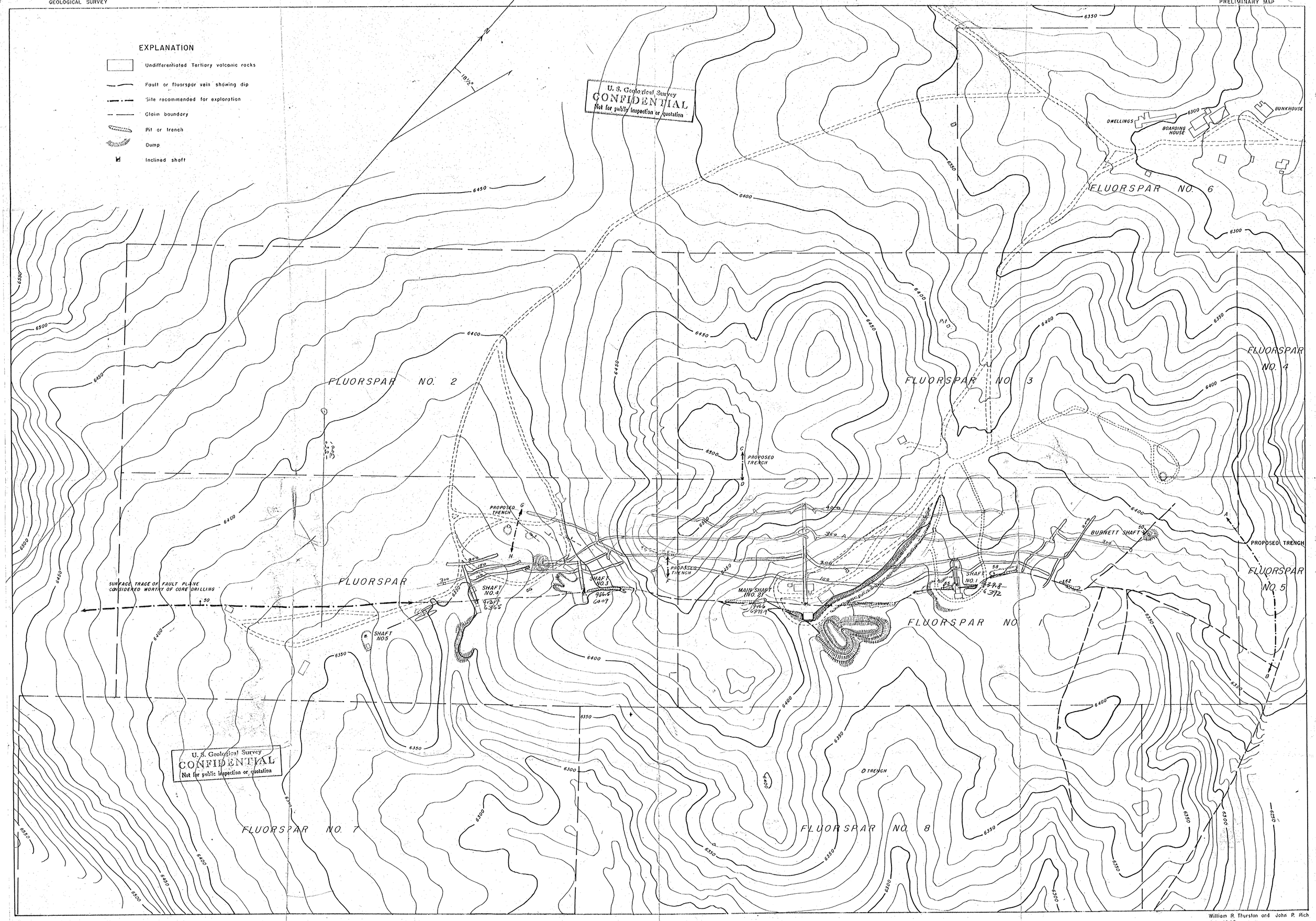
DMA SAMPLES (1)		
NO.	WIDTH FT.	%CaF_2
1	4.5	74.9
2	4.0	59.9
3	3.5	47.5
4	2.0	16.0
5	4.5	60.4
6	3.5	69.1
7	6.0	57.6
8	3.5	71.9
9	3.0	55.5
10	4.9	61.1
11	5.5	13.7
12	2.0	74.6
13	5.0	78.4
14	5.0	67.3
15	3.0	60.1
16	5.0	47.0

NOTE — OTHER SAMPLES ARE FROM APPLICANT'S REPORT

Mine workings, Baxter flourspar deposit.

0 50 100 150 200 250
SCALE OF FEET

FIG. 1

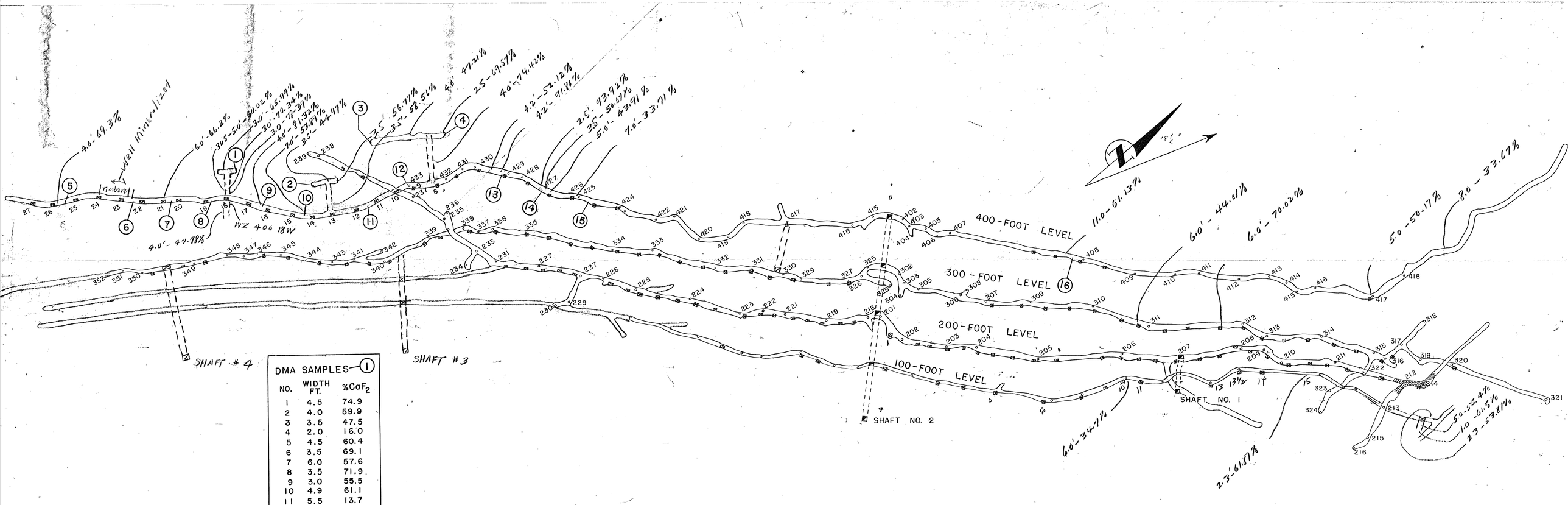


William R. Thurston and John P. Rich
July 1945

PLATE 2.– PRELIMINARY GEOLOGIC AND TOPOGRAPHIC MAP OF THE BAXTER FLUORSPAR DEPOSIT, CHURCHILL COUNTY, NEVADA

0 100 200 300 400 500 FEET

Contour Interval 10 feet
Datum assumed



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13	5.0	78.4
14	5.0	67.3
15	3.0	60.1
16	5.0	47.0

NOTE — OTHER SAMPLES ARE FROM APPLICANT'S REPORT

Mine workings, Baxter flourspar deposit.

0 50 100 150 200 250
SCALE OF FEET

FIG. 1