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PRINTED: 11/20/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: LUCKY STRIKE

ALTERNATE NAMES:  
CAPT FLUORSPAR

COCHISE COUNTY MILS NUMBER: 650

LOCATION: TOWNSHIP 22 S RANGE 23 E SECTION 35 QUARTER SE  
LATITUDE: N 31DEG 28MIN 14SEC LONGITUDE: W 109DEG 59MIN 03SEC  
TOPO MAP NAME: BISBEE - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:  
FLUORINE FLUORSPAR  
LEAD  
GOLD LODE

BIBLIOGRAPHY:  
USBM REPORT FILE NO 463.2/20009 BY P S HAURY  
ADMMR "U" FILE - COCHISE FL 1  
ADMMR LUCKY STRIKE FILE  
ELEVATORSKI,E.A.1971,AZ FLUORSPAR,P 12,ADMMR

CAPT. FLUORSPAR

COCHISE

ABM Bull. 180, p. 351

Cochise Arizona  
County State

Chief Mineral fluorspar No. Fl 1  
Accessory Minerals lead gold

Property Name: Lucky Strike

Location: SW corner of Sec. 35, T22S, R23E.  
For details see Exam File 402 20009  
Date 4632

Owner: Name Address

C.A. Capp Hereford, Ariz. 1/1944

Operator:

ean Mori Bisbee, Ariz. 1/1944

Production:

Total none From                      to 1/1944  
Present Rate                      per                      Date                     

Source of Information:

Status	Date
<u>Inactive</u>	<u>1/1944</u>

USBM Report: File No. 4632 402 20009  
Engineer: P.S. Haury

Classification: Prospect

(See other side for general information)

General Information: 1/1944

*FL 1*

In granite porphyry & quartzite along a sheared aplite dike is a 1½' vein outcropping 100' that carries fluorspar & lead. The vein outcrops again farther N where it is narrower, & to the S about 500' where an 82' shaft has been sunk & some xcutting done. 2 to 3" bands of fine grained galena are on the shaft dump that came from the shaft. Besides the shaft, opencuts & a perhaps short xcut, there is a <sup>xcut</sup> reported 425' in being driven to intersect workings on the outcrop. This xcut 400' lower lacks 100' of reaching the vein. 20 unpatented claims make up the group.

**[REDACTED]**

Character of Ore:

Fluorspar & galena, reported some gold.

Equipment (Date 1/1944):

Considerable 8# rail & 2 12' ore cars.

CAPT FLUORSPAR

COCHISE

Environmental Engineering & Chemical Co., Box 4123, Bisbee. Ronald C. Mehl, V.P. & Gen. Mgr., bought Capt property in Mule Mountains and expect to produce 10,000 TPM from underground. GWI Memo 6/28/71

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Mine visit. Capt mine in Mule Mts.; no one around. GWI WR 7/7/71

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Mine visit. Capt mine in Mule Mts.; no one around. GWI WR 11/10/71

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Reported that Environmental Engineering & Chemical Company dropped from lease by Cartmell Bros. on their property near Pearce. JHJ 1/20/72

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Capt Fluorspar; no apparent activity. GWI WR 5/4/72

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Went to Palominas and met Mrs. Capt (91 years old). Her son-in-law said we couldn't get to the mine without a 4 wheel drive vehicle. GW WR 3/9/75

---

Jerry and Bill Hirt reported that they had gone to the Capt mine and found little or no fluorspar mineralization in a limestone-granite contact which had been prospected by 3 adits. GW WR 3/17/75

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Mine visit to Capt mine with William Hirt for MAS. GWI WR 3/17/75

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William S. Edgemon and Ray Whelan, 622-5297, 8 W. Paseo Redondo, Tucson, regarding the Capt. tungsten property. They are planning on a little work there. GWI WR 10/6/75

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William Edgemon said that Art Maclain (spelling not confirmed) had extended the tunnel on the Capt. mine from 70' to 120' and that he would do  $\pm 20'$  more at which point they expected to hit the vein extention. GWI WR 12/15/75

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LUCKY STRIKE #18 CLAIM (same as Capt Fluorspar)

COCHISE COUNTY

Environmental Engineering & Chemical Corp.  
(Nevada Company)  
P.O. Box 1022  
El Monte, California 91734

Ron Mehl - mine supt.  
Dr. Ralph E. Gray - geologist  
Lloyd Boulden  
1916 W. Root Lane  
Tucson (887-1593)

GWI Note 5-25-71

---

Environmental Engineering & Chemical Corp.  
Box 4123  
Bisbee, Arizona

Ronald C. Mehl, V.P. & Gen. Mgr.

Bought Capt Fluorspar property in Mule Mountains and expect to produce 10,000 TPM from underground. GWI Memo 6-28-71

---

Reference: ABM Bull. 180, p. 351

Lucky Strike  
Cochise Co - (6)

DR. RALPH E. PRAY  
Consulting Engineer  
MINING AND METALLURGY  
[213] 797-3617

Research Laboratories - 16 CONGRESS  
PASADENA, CALIFORNIA 91105  
[213] 793-6471

February 25, 1971

Mr. John C. Jeffers  
EE & C Corporation  
Box 1022  
El Monte, California 91734

Dear Mr. Jeffers:

During my late-November, 1970, examination of the Lucky Strike fluorspar claim, I took bulk samples of massive spar from the vein at the higher elevations. These samples constitute what I believe to be ore as it would be selectively mined for shipment to a metallurgical facility. Three large samples, weighing from five to ten pounds each, were taken.

Sample	Location	CaF <sub>2</sub>	SiO <sub>2</sub>	CaCO <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Pb	Total
1	Base of cliff below slot	89.1	3.9	6.8	0.1		tr	99.9
2	Near tree in vein	88.0	3.7	7.1	1.0		tr	99.8
3	Vein at crest of hill	86.8	5.6	6.4	0.9		tr	99.7

	Effective CaF <sub>2</sub>
1	79.4
2	78.7
3	72.8

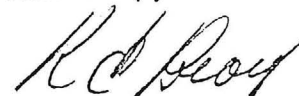
Judging from my sampling work on the north end of the deposit, I believe you will experience no difficulty in meeting specifications set in the vicinity of 70% effective CaF<sub>2</sub>. A large tonnage of similar material is also available at the lower end of the vein, but the lead content (as PbS) is prohibitively high for direct shipping.

Other constituents of the samples taken were:

Mg	0.04 - 0.1
Be	0.0004 - 0.001
Mn	0.0025 - 0.1
Y	0.012
Cu	Tr
Sr	0.005

Material near the surface is quite friable and will contain excessive fines generated during handling. However, once the top layer has been removed, the spar will hold together satisfactorily. Flotation testing of samples to meet acid grade specifications will be delayed until a protected ore horizon is encountered.

Sincerely,



Ralph E. Pray, D.Sc.

REP/ck

FIELD EXAMINATION AND SAMPLING  
OF THE LUCKY STRIKE FLUORSPAR  
PROPERTY

Location and Access

The Lucky Strike Group No. 18 property is a single patented lode mining claim situated principally in Section 34, Township 22 South, Range 23 East, G&SR Meridian, Warren Mining District, Cochise County, Arizona. The claim is 1500 feet long by 600 feet wide, and was patented by Survey No. 4268. The claim was reached by driving southwest out of Bisbee, Arizona, on Highway 92, a distance of 11.4 miles. A dirt road directed northerly was then followed a distance of 9.5 miles to its termination on a steep hillside below, and to the west of, the Lucky Strike claim. A 30-minute walk up the steep, winding trail was the final stage in entering the claim area.

The claim may also be reached by driving about six miles northwest of Bisbee on Highway 80, and proceeding south from the highway. However, most of the land paralleling the highway is fenced and privately owned. The most direct route from Highway 80 is through land owned by Dr. Behney, of the Cochise Animal Hospital. Through his locked gate, a primitive road stretches to within about one-half mile of the claim.



Fluorspar Mineralization

A vein of fluorspar striking approximately north 28 degrees east bisects the Lucky Strike claim. Originally located and worked for silver, the vein contains spar in widths up to eight feet. The northern end of the claim is at an elevation of 6680 feet, where the vein contains visible spar over a considerable length and width, while sulfides are almost non-existent. At the lower elevation, 6320 feet, there is a 70-foot shaft, a windlass, and a dump containing large boulders of spar interlaced with argentiferous galena. The shaft was sunk on the near-vertical spar vein. The extent of the vein south of the shaft was not determined, nor was the shaft examined below ground.

Fluorspar occurs in the vein as a sea-green, a white, and rarely, a blue, massive mineral. Pure spar seams of over a foot in width occur parallel to each other, interspersed with lime silicates.

Analyses

<u>Sample Location</u>	<u>Sample Width</u>	<u>CaCO<sub>3</sub></u> (%)	<u>SiO<sub>2</sub></u> (%)	<u>CaF<sub>2</sub></u> (%)	<u>Fe<sub>2</sub>O<sub>3</sub></u> (%)	<u>Pb</u> (%)
Tier 1	14 inches	5.8	3.9	89.1	0.8	trace
Tier 2	48 inches	2.3	11.3	85.7	1.1	trace
High Tier	70 inches	1.6	16.4	80.5	1.8	trace
High Tier	14 inches	0.6	1.7	97.5	trace	trace
Stout No. 1	20 feet	2.2	79.0	12.1	6.1	
Stout No. 2	lime wall	76.6	11.6	6.3	4.2	
Stout No. 3	4 feet	9.6	22.7	56.2	-	

Stout No. 4, a cut across two feet of high-grade fluorspar, was not analyzed.

A spectrographic analysis of the Tier 2 sample showed 5.8% Si, which corresponds to 12.4% SiO<sub>2</sub>. The spec calcium content of 44. % corresponds roughly to 85.6% CaF<sub>2</sub>.

The silver is quite high in the galena from the shaft dump. Rather than report such optimistic results on samples removed from the dump, I would prefer to take samples from the vein in the shaft, during a future visit to the property, for silver analysis. Suffice it to say at this point that the silver could lend quite an interesting sidelight to this venture, and that provision must be made for sulfide flotation prior to fluorspar beneficiation.

The Mule Mtn. peak hematite sample spectrograph showed nothing of interest.

Estimate of Possible Reserves

Average vein width estimated at 2 yards

Vein length estimated at 333 yards

Shaft section

$$23 \text{ yds} \times 333 \text{ yds} = 7,650 \text{ yds}^2$$

Hillside Section

The highest part of the vein is at elevation 6680, while the lowest exposure, 1000 feet to the SWS, is at elevation 6320. The difference, 120 yds, is used as maximum height, while average height is obtained by dividing by 3.

$$\frac{120 \text{ yds} \times 333 \text{ yds}}{3} = 13,320 \text{ yds}^2$$

Total area of both sections is therefore 21,000 yds<sup>2</sup>. At a thickness of 2 yds, the volume is 42,000 yds<sup>3</sup>.

The ore, at a density of 190 lb/ft<sup>3</sup>, weighs 5100 lbs, or 2.55 tons, per yd<sup>3</sup>.

There are then 107,000 tons estimated above the horizon beginning at the elevation of the shaft floor. At 60% contained CaF<sub>2</sub>, the pure mineral content would be 64,000 tons. Recoverable CaF<sub>2</sub> may amount to 57,000 tons, if this very rough approximation is followed.

### Method of Operation

The Lucky Strike can be mined by underground methods beginning from an adit below the outcropping. The possibility of utilizing an existing cross-cut tunnel, situated considerably below the shaft, should be considered. If ore is encountered on a horizon below the shaft floor, the reserve figure will increase accordingly. Prior to such action, the surface exposures should be investigated by shallow drilling and blasting along the strike of the vein. All old workings should be thoroughly investigated by measuring and sampling. The point of entry into the mountain, with regard to production and road-building, may then be prudently chosen.

The adit, which will probably enter the side of the mountain in barren rock, would be directed toward the vein. A curve to the north would take place at the vein intercept, following which the adit would be driven in ore. As the adit is driven in ore farther into the mountain, raises would be driven upward into the ore vein at established points 200 or 300 feet apart. From this work, stopes, ore passes, chutes and air vents would follow.

Ore trucked from a holding bin located below the entrance of the adit would go a distance of nine miles, downhill, to a railroad siding. This road, which is all dirt, required extensive renovation as of late 1970.

Production

A crew of four miners, with helpers, and two trammers, in four stopes leading into a single adit, could produce 80 to 100 tons of fluorspar ore per shift where neither water nor timbering interfered. Additional daily production could be provided by working more than one shift. An increase in shift production would require a second opening for haulage, or mechanized haulage along the adit, with a proportionately increased work force. Where silica content increases, at the sacrifice of the easily-mined spar content, tonnage would fall off.

Two men would be required at the adit portal to service machinery and tools, handle track, steel, explosives, pipe, air, water, etc. Haulage to the railroad should be contracted. One supervisor would coordinate all activities.

Respectfully Submitted,



Ralph E. Pray, D.Sc.

Consulting Engineer

Pasadena, California

January 4, 1971

# PACIFIC SPECTROCHEMICAL LABORATORY, INC.

CHEMICAL AND SPECTROGRAPHIC ANALYSIS

RESEARCH

2558 Overland Avenue

Los Angeles, California 90064

December 30, 1970

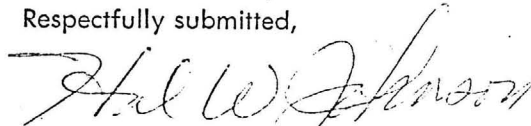
Report of semiquantitative spectrographic analysis of sample  
submitted by

Dr. Ralph E. Pray  
16 Congress  
Pasadena, California 91105

Mule Mtn. Hematite

Iron-	29. %
Silicon-	11.
Aluminum-	9.0
Calcium-	0.22
Magnesium-	0.50
Potassium-	9.1
Beryllium-	0.0015
Titanium-	0.29
Manganese-	0.044
Gallium-	0.028
Vanadium-	0.0097
Copper-	0.010
Nickel-	0.0028
Zirconium-	0.030
Strontium-	0.025
Chromium-	0.011
Other elements-	nil

Respectfully submitted,



PACIFIC SPECTROCHEMICAL LABORATORY, INC.

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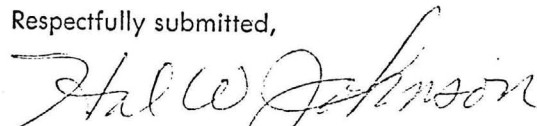
Dr. Ralph E. Pray  
16 Congress  
Pasadena, California 91105

Lucky Strike Mine  
Bisbee, Ariz.

*Tier No. 2*  
*R.E.P.*

Calcium-	44. %
Silicon-	5.8
Aluminum-	0.0083
Magnesium-	0.039
Beryllium-	0.00037
Iron-	0.068
Manganese-	0.0025
Yttrium-	0.012
Copper-	0.000039
Strontium-	0.0047
Other elements-	nil

Respectfully submitted,



PACIFIC SPECTROCHEMICAL LABORATORY, INC.

DR. RALPH E. PRAY  
*Consulting Engineer*  
MINING AND METALLURGY  
[213] 797-3617

*Research Laboratories - 16 CONGRESS*  
PASADENA, CALIFORNIA 91105  
[213] 793-6471

November 27, 1970

Mr. Ron Mehl  
9658 Telstar Avenue  
El Monte, CA 91731

Dear Mr. Mehl:

Concerning the fluorspar deposits under study by you and your associates near Bisbee, Arizona, my letter to you of November 15, 1970, contained four recommended actions, three of which have been completed in good order, leaving the Stout land yet to be properly evaluated via the water-filled shaft.

The main body of fluorspar lies within a single patented lode claim, Survey No. 4268, owned by A.B. Capt, Box 3083, Lowell, Arizona. Mr. Capt found silver on the claim in 1907, and patented the 20-acre claim about 40 years later. The silver occurs in lead sulfide (galena), an accessory mineral in a fluorspar vein measuring from four to eight feet or more in width at the surface. The vein neatly bisects the claim, with a 70-foot shaft at the low elevation. The northern end of the 1000 foot-long vein is about 430 feet above the southern end at the bottom of the shaft. No work has been done in the vein at the high elevation, probably due to the absence of metallic minerals. The fluorspar, however, is most impressive in both quality and mass.

My preliminary calculations show that there probably are 110,000 tons of ore containing 60 percent fluorspar between the shaft and the highest outcrop. This amounts to 71,500 tons of  $\text{CaF}_2$ , of which 65,000 tons are recoverable by flotation as acid grade product. I would expect to find additional ore reserves below the elevation used here as a base line, 6250 feet above sea level, but would also expect the silica content to increase with depth. Samples taken from the shaft show a higher silica content than those taken at higher elevation, despite Mr. Capt's assays of 54 to 90 percent  $\text{CaF}_2$  (by Hawley & Hawley Assayers) on shaft samples.

Therefore, possible and indicated fluorspar ore reserves in this deposit should be thought of as being somewhat in excess of 100,000 tons. A 75 ton per day mill would exhaust this deposit in 4.2 years. The Stout deposit may add several more years to the life of a proposed operation. Utilizing the Capt deposit alone, the revenue produced at the present price of acid grade spar (\$60 per ton) would amount to \$3,900,000.

The cost of placing a mine and small mill in operation would be about \$150,000. The flotation plant would recover values in silver and lead in addition to spar. The estimated cost of mining and treating ore is \$22 per ton. Capital and operating cost for 110,000 tons is therefore \$2,570,000, leaving a profit before taxes, interest, etc., of 1.3 million dollars, or \$310,000 per year.



The deposit will not be difficult to mine, as it stands vertical between hard and dense wallrock. Access will best be gained through an adit from the north, one mile from Highway 80 between Tucson and Bisbee, about three miles from Bisbee. Ore will be mined by stoping upward from tunnel raises, and can be trammed to a mill located on the north side of the mountain. Tailings would go into a deep ravine in the foothills. This land is in the public domain and should be acquired by mill-site location during the transaction with Mr. Capt.

I recommend the following:

- (1) Purchase the claim for \$25,000, as agreed to with Mr. and Mrs. Capt, by paying \$5,000 down and the balance over a 10-year period at 6% interest.
- (2) Simultaneously claim as much land as is required, by location, to protect the central claim and to afford adequate space for mill and tailings.
- (3) Negotiate with Dr. Behney for lease or rental of his land parcel controlling entry between the highway and the claim. The house should be included, as it will serve admirably for living quarters. Permission to widen the road should be obtained, as large trucks would be using the road.
- (4) Contract to core drill at least one exploratory hole on the south side to verify the depth of the vein beneath the high elevation.
- (5) Trench across the vein surface, using a gasoline jackhammer and explosives, between the shaft and the high elevation.
- (6) Blade a road in from the ranch-house to the millsite, and thence to the projected adit portal, where mining will begin.
- (7) Mine and ship for milling or direct sale a minimum of 50 tons of ore. A large portion of ore mined will qualify as metallurgical grade directly, without treatment. Material removed during adit or tunnel driving can be either sold or custom milled.
- (8) Drill a well for mill water. About 60 gpm will be required.

I wish to caution you concerning the mill. It should be built only when the ore supply, the reserves, are classified as "assured". Assured ore is ore which has width, length and depth measurements taken during exploration. The depth of this deposit is unknown. A reserve figure of 110,000 tons cannot be assured without drilling or tunneling. When an ore intercept or a long tunnel has been completed, a mill should be seriously considered. A water source must then be confirmed by pumping. The actual mining operation may be initiated as rapidly as physical conditions permit.

I suggest that you and your associates acquaint yourselves with the Beatty, Nevada, fluorspar operation. This is an underground mine shipping metallurgical grade ore without treatment. Although acid grade spar has the strongest market, and always requires treatment, you will benefit by comparing the potential of the Bisbee deposit with the present operation of the Beatty mine.

My feeling regarding the future of fluorspar is best conveyed to you in the words of Dr. Brian Hodge, long a student of the world fluorspar market.

He wrote, in the "Mining Annual Review", London, in 1969, that world fluorspar consumption in 1968 was about 3.2 million tons, and that by 1974 some 6.2 million tons would be required annually. An article in "Industrial Minerals", August, 1969, projected a serious shortage of fluorspar by 1973.

All of the factors I have observed during the short time this project has been active, and your handling of matters related to it, indicate that a profitable venture will result.

My detailed report will be completed as time permits, following sample analysis.

Sincerely,

A handwritten signature in cursive script, appearing to read "R E Pray".

Ralph E. Pray, D.Sc.

### Mid-January (1971) Trip to Bisbee

On January 13, 1971, I entered the Lucky Strike fluorspar claim area with Mr. Bryant Smith at the end of the day to inspect road building progress. We met the equipment operator as he was leaving for the day. The work and the road placement route were satisfactory.

On January 14, Mr. Smith and I arrived on the property quite early. My objective was to further study the characteristics of the fluorspar vein and accessory minerals. I was specifically interested in the width of the vein at depth in old workings and at the lower, or southerly, end of the claim. Some means of evaluating the silver content of the lead sulfide (galena) in the spar was also sought, through sampling.

#### Tunnels

The lower tunnel (T #1 on map), or adit, entered the hillside west of the claim boundary on a heading of S 60° E, with the portal at an elevation of 6000 feet. The untimbered, solid-walled adit continued for 195 feet, at which point it turned almost due east for 200 feet, and then S 50° E for 100 feet. The entire 500 feet was laid with mine rail. One ore car was in the adit. Minor fluorspar and galena was present at the face in a brown limestone. The face appears on the map to be in the vein 240 feet below the shaft collar.

Tunnel #2, with a caved portal at elevation 6120, was inaccessible. The size of the dump indicated that the workings may have penetrated several hundred feet. A small amount of fluorspar was found on the dump, indicating that the vein was intersected in the tunnel.

Tunnel #3, with the portal at the same elevation as T #2, is north a few hundred feet from the T #2 dump. No. 3 penetrates easterly about 50 feet and contains fluorspar several inches thick on the north wall. This adit bears about S 73° E and is directed toward the shaft.

#### Shaft

The shaft is located directly on the fluorspar vein. The partially timbered shaft is in fair condition, but access by the existing ladders was considered hazardous. I climbed down the first ladder, and took a six foot sample on the north wall. The spar was highly contaminated by limestone and silicates. Galena was present in the spar. On the south side of the shaft collar, a sample of spar was taken from "in place" which contained abundant galena, blue-green spar and white quartz.

#### Vein Continuity

The northern end of the vein is from 8 to 12 feet wide in

places, while the southern end, at the surface, is only an inch or so thick. The shaft area appears to be in ore from 4 to 6 feet in width. Therefore, surface indications limit the visible ore to a length along the vein strike of about 1000 feet. It is doubtful if exploration would result in any increase in this length.

The vertical continuity of the vein appears to be strong, but the vein thickness apparently diminishes rapidly below elevation 6200 feet. The lack of ore in the tunnels and tunnel dumps can only mean that the fluorspar pinches out with depth.

On the basis of this, I cannot ascribe to the deposit any more ore than the "possible ore" previously noted. This amounts to about 100,000 tons.

#### Sample Analysis

	Silver (oz/Ton)	Gold (oz/Ton)
Bisbee Green Rock (Ni=nil)	trace	trace
6 foot sample in shaft	trace	trace
50 samples from shaft dump (representing rock from bottom of shaft)	1.8	0.02
Coarse Galena from vein at shaft - in spar	2.0	trace
Fine Galena from vein at shaft - in spar	3.8	0.03

The green rock was heavy float, containing abundant iron sulfides, found on the hillside. The shaft sample was taken at the base of the first ladder and was not acceptable as feed for spar concentration. The shaft dump samples were chipped from large rock which would make good mill feed. The galena samples were specimens and amounted to perhaps 10% of the total rock sample. The galena flotation concentrates would contain about 65% Pb and 20 to 40 ounces of silver per ton. I estimate the lead content of the shaft rock to be from 1 to 5 percent, depending on the spar. As the fluorspar content increases in the shaft area, so does the lead content. At higher elevations no lead was found in the field samples by visual inspection.

#### Suggestions for Further Work

The most rapid way in which to prove up the orebody while developing a mine system would be to extend T #3 to the vein. The intersection should take place about 125 feet from the present face. This work would cost about \$5000, and would take several men about 3 weeks. Tunnel #2 should be opened for examination (I asked Bryant Smith to have the dozer clean out the caved portal). When T #3 intersects the vein, a drift should be run along the vein northward.

Ore can be removed from the surface at the outcrop area in

DR. RALPH E. PRAY  
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November 15, 1970

Mr. Ron Mehl  
9658 Telstar Avenue  
El Monte, CA 91731

Dear Mr. Mehl:

I returned on the night of November 13, 1970, from an inspection performed under contract to you and your associates of two Arizona fluorspar properties.

My findings, obtained over a four-day period, will be fully documented in a forthcoming report, following analysis of samples taken. However, in view of certain results of the investigation, I feel that immediate action is warranted regarding one of the mineral deposits under study.

- (1) Discussion with the intermediaries at the Tucson airport, and later in Bisbee, indicated that the northern deposit was on property owned by R.D. Stout, and that the southern deposit was on property owned, or claimed, by A.B. Capt.
- (2) According to records in the Cochise County courthouse at Bisbee, Mr. Stout owns 238.9 acres, in five parcels, in sections 21, 22, 27 and 28, T22S, R23E, and Mr. Capt neither owns nor has claim to any parcel of land in that area of four sections. A study of records in the Records office in the same courthouse showed that Mr. Capt has no valid mining claims in the area. The land in the vicinity of the south deposit appeared to be Federal Land. A detailed search by the County Assessor substantiated my findings.
- (3) On November 13, 1970, I did locate and record a lode mining claim in section 28, T22S, R23E, to encompass a massive vein of fluorspar striking about N20°E across the crest of the Mule Mtns. You and your associates are the owners of this claim providing that additional searching fails to show a prior owner of record. This new ownership will then be conveyed to you by quit claim deed, with no obligation, at the time you so request.
- (4) There is a strong possibility that this claim, called the Green Eagle No.1, can serve as the nucleus to a group of valuable fluorspar claims.
- (5) The Green Eagle No.1 appears to contain a vein of fluorspar of sufficient size and purity to warrant any immediate action deemed reasonable. If my location is valid, more claims should be staked. If someone else owns the land, careful negotiations should begin immediately following verification.
- (6) The fluorspar market appears to be very strong and has a most promising future. This would be a good time to acquire property for either production or trading.
- (7) There is some evidence of interest in the subject deposits by eastern interests.

I therefore recommend that the following actions be taken:

- (A) Ascertain the precise geographical location of the Green Eagle vein.
- (B) Re-study the Cochise County records for entries in this location.
- (C) Satisfy all Mining Law requirements as to valid location, or, if the land is already held, negotiate a lease with option to purchase.
- (D) Pump out the shaft on the Stout land near the highway, and sample the vein in that location, under a lease agreement.

This would be followed by the improvement and placement of roads to the Eagle claims, from which ore would be trucked to the railroad for shipment to a mill. Trial run mill treatment arrangements must first be secured. This will permit a 50-ton carload of surface ore to be mined, trucked, shipped, milled and marketed.

If you are more interested in a full-scale program, following points A, B and C above, this may be approached through a systematic sampling and testing program in the Green Eagle area. An engineer and two helpers could expose and sample the vein over its entire length (and elevation) in perhaps five days. I use a light-weight gasoline drill for this type of work, penetrating up to six feet of rock in short order. An additional time must be allowed for completing the work outlined in points A, B and C. This will require a minimum of three days.

Sincerely,



Ralph E. Pray, D.Sc.



*Andrew J. Zinkl*  
REGISTERED MINING ENGINEER

1602 N. CAMPBELL ST.  
PRESCOTT, ARIZONA 86301  
PHONE 445-5763

September 27, 1971

John Jeffers, President  
Environmental Eng. & Chem. Co.  
1455 College Ave.  
Redlands, Calif. 92313

Re: Capt Mine Development

Dear Mr. Jeffers,

My preliminary examination of the fluorspar mineralization at the Capt mine near Bisbee, Arizona, was undertaken this month. I was accompanied by Ron Mehl, and had the use of Dr. Ralph Pray's report.

The purpose was two-fold in that I wanted to examine the vein and structure to estimate possible ore reserves, and secondly to determine the best manner of opening up the deposit for mining.

Ore Reserves -

Dr. Pray's ore reserve calculations are acceptable as to length and depth, but I take some exception to his width of 6 feet while maintaining at 60% grade. Using his assays and width of his Tier sampling data, the calculations would indicate a grade in the range of 55%  $\text{CaF}_2$  when held to a 6 foot mining width. I mention this only that it would change the grade of ore out of the mine as feed to the mill.

He may be conservative in his depth estimate, having used the bottom of the shaft as the base for this estimate. The vein probably extends deeper and a possibility exists for good mineralization occurring where the vein comes in contact with the hanging wall limestone as a replacement type of deposit to the southwest of the small shaft.

General speaking, his estimate of 57,000 tons of recoverable  $\text{CaF}_2$  appears realistic and acceptable.

Mine Development -

There is no question in my mind on how to approach the problem of opening up this deposit. I would unhesitatingly take advantage of the long cross-cut which has been opened going toward the small shaft. A vertical difference of some 150 feet exists between this cross-cut and the bottom of the small shaft.

Continuation of this cross-cut to the vein, or vein structure, will be the easiest and cheaper manner of getting to the vein. If mineralization occurs at that depth in the vein you will be adding another 150 feet of depth to Dr. Pray's calculations to add substantially to your reserve.

*Andrew J. Zimbl*  
REGISTERED MINING ENGINEER

1602 N. CAMPBELL  
PRESCOTT, ARIZONA 8  
PHONE 445-5763

John Jeffers  
Redlands, Calif. 92313

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Adit site preparation work will be costly to start your cross-cut at some other location, and the time to get your new adit start will be a disadvantage. Road work, site preparation, mine dump preparation, etc. will all be time consuming and costly.

I would start by widening and getting more height in the existing cross-cut to accommodate a mucking machine; this would require having the cross-cut end up with a 7 foot height and a 7 foot width.

Bear in mind that this is the cross-cut through which all of the ore will be funneled to your trucks and should therefore be of sufficient size to accommodate all the rail, water and air lines, drainage, etc., etc. which will be needed to operate the mine.

I am not certain as to the total length of this cross-cut; however, Ron indicated that it was approximately 300 feet deep and was about 100 feet short of contacting the vein.

Assuming these figures to be correct, you can anticipate spending about \$30.00 per foot to enlarge the present opening and then I would use a figure of \$50.00 per foot for the 100 feet of new cross-cut.

These two unit cost figures include contracting the mining, powder, rail, air lines, water lines, ventilation pipe and blowers and some timber where needed. It does not include an ore bin nor any substantial expenditure on the road. Nor does it include a water tank and water truck which will be needed to furnish the water for drilling.

The following estimate would be practical in anticipating the finances needed to extend the cross-cut to the vein:

300 feet of enlarging cross-cut @ 30.00 foot-----	\$9,000.00
100 feet of new 7 x 7 cross-cut @ 50.00 foot-----	15,000.00
Enlargement of area at adit-----	4,000.00
Road repair to adit from highway-----	5,000.00
Water tank, piping, water truck-----	6,000.00
Small building at adit, in place-----	4,000.00
Misc. supervision, admin.-----	7,000.00
Total -----	\$50,000.00

This figure includes some definite permanent aspects in that you will have all the rail, pipe lines, etc. in place for start up of your mining operation once you reach the vein.

*Andrew J. Zinkl*  
REGISTERED MINING ENGINEER

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The vein will be an undulating structure with narrow widths of mineral down to one foot and could easily widen to six or more feet. At the wider places in the vein it may be possible to have direct shipping metallurgical ore, possibly to the extent that 20% to 25% of the development drift will produce shipping grade ore.

However, do not drive the drift in any dimension less than 6 foot wide by 7 foot high, taking ore from such places as the grade permits. You will be mining about 3 tons of ore per foot of advance in the drift, so that each 6 foot round will produce about 18 tons of material.

On this basis you must provide two stockpiles at the cross-cut adit -- one for less than metallurgical grade for mill feed, and the other, preferably into a bin, for such tonnage as can be shipped directly.

This letter is not intended to be a detailed report, but rather to serve as a general guide for your development program. Contact me if I can be of more help.

Very truly yours,

*Andrew J. Zinkl*  
Andrew J. Zinkl  
Registered Mining Engineer

CC: Lew Paul  
AJZ:bv

1 **MINA DEPARTMENT OF MINERAL RESOURCES**  
**Mineral Building, Fairgrounds**  
**Phoenix, Arizona**

1. Information from: Lloyd Boulden & Ron Mehl  
Address: 1916 W. Root Ln, Tucson 887-1593 & P.O. Box 684 Loma Linda, Calif.  
Loma Linda, Calif. 92354
2. Mine: Lucky Strike #18 Claim 3. No. of Claims - Patented 1  
Unpatented 6 ?
4. Location: Mole Mts Near Bisbee  
? ? ?
5. Sec \_\_\_\_\_ Tp \_\_\_\_\_ Range \_\_\_\_\_ 6. Mining District \_\_\_\_\_
7. Owner: MR. CAPT
8. Address: Bisbee
9. Operating Co.: ~~Environmental~~ Environmental Engineering & Chemical Co.
10. Address: P.O. Box 1022 El Monte Calif.
11. President: \_\_\_\_\_ 12. Gen. Mgr.: \_\_\_\_\_
13. Principal Metals: FLUORSPAR 14. No. Employed: 6
15. Mill, Type & Capacity: \_\_\_\_\_
16. Present Operations: (a) Down  (b) Assessment work  (c) Exploration   
(d) Production  (e) Rate \_\_\_\_\_ tpd.
17. New Work Planned: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
18. Misc. Notes: \_\_\_\_\_  
From Office Visit No info on Lucky Strike #18 Pat Claim  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: 5/18/71

[Signature]  
(Signature)

(Field Engineer)

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Capt Fluorspar

Date June 17, 1960

District Warren (Bisbee) Dist., Cochise Co.

Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from A. B. Capt. Not visited.

Location: In Mule Mts., near Mule Pass. Property about 3 miles west of the Bisbee Post office by air line.

Number of Claims: 1 unpatented claim.

Owners: A. B. Capt and Ursula Capt, Box 3083, Lowell, Arizona.

Principal Minerals: Fluorspar

Present Mining Activity: Assessment work only.

Geology: Vein about 8 ft. wide, with a pay streak of fluorspar about 2 ft. wide.

Ore Values: Mr. Capt reports that the fluorspar assays 90% calcium fluoride.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Lucky Strike 17, 18, 19

Date May 3, 1956

District Warren District, Cochise Co.

Engineer Axel L. Johnson

Subject: Present Status.

Location Mule Mts. ---NE of Hereford

Number of Claims 1 patented claim. Court House records call it Lucky Strike # 18.

Owner Albert B. Capt and Ursula Capt, Box 3083, Lowell, Ariz.

Principal Minerals Fluorite and Lead.

DEPARTMENT OF MINERAL RESOURCES

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REPORT TO OPA ON ACTIVE MINING PROJECT

Date: 2/25/45
Name of Mine: Lucky Strike 17, 18, 19
Owner or Operator: J. E. McKenna
Address: Phoenix Arizona
Mine Location: North West Kingman Ariz

Filing Information

File System

File No.

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production; Development [checked]; Financing; Sale of mine;

Experimental (sampling); Owner's occasional trip;

Other (specify)

PRODUCTION: Past and Future.

Tons

Approx. tons last 3 months

Approx. present rate per 3 months

Anticipated rate next 3 months

If in distant future check (X) here

EQUIPMENT OPERATED:

Table with 4 columns: Type, Quantity or Horse Power, Miles or Hours Per Month, Gallons Required Per Month. Includes entries for Personal Cars, Light or Service Trucks (1 1/2 ton Dodge), Ore Hauling Trucks, Compressors, and Other Mine or Mill Eqpt.

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Fluorite and lead

REMARKS:

On account of continuing strategic nature of lead this application is recommended for approval. Mr. McKenna is a well-known taxpayer in the district.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By

[Signature]