

CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
520-770-3500
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the
James Doyle Sell Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

J. H. COURTRIGHT
EXPLORATION GEOLOGIST
ARIZONA REGISTRATION No. 5927

202 SUFFOLK DRIVE
TUCSON, ARIZONA 85704

PHONE (602) 297-0747

October 2, 1981

U. S. Department of the Interior
Bureau of Land Management
Federal Building
Reno, Nevada 89509

Asarco Millsite Claims

Gentlemen:

The following contains my appraisal of the mineral potential of ASARCO, Inc. Millsite Claims S.B. 1 through S.B. 152, requested by Mr. R. B. Crist. The claims cover all of section 11 plus the N one-half of the NE one-fourth and the NE one-fourth of the NW one-fourth of section 20, T. 12 S, R. 7 E, Pima County, Arizona.

The above described land was examined by me during a 1954 geologic mapping project. Occasional visits were made during subsequent years. Topographic relief is low to moderate with numerous bedrock outcrops protruding through a generally thin mantle of soil, sand and gravel. Other than a few Cretaceous arkosic beds, bedrock is for the most part composed of Early Tertiary andesitic volcanics. These are cut by several wide-spaced, narrow, discontinuous monzonite porphyry dikes.

Most all rocks are essentially barren of mineralization, excepting those within an ESE trending zone of phyllic-argillic alteration, 600' to 1700' in width, which passes through the center of section 11. All outcrops (arkose, andesite and monzonite porphyry) within this zone are thoroughly leached and contain limonites derived from the oxidation of pyrite with very minor amounts of chalcocite as small, local occurrences. Two small zones of relatively weak alteration were mapped in the northern half of section 11.

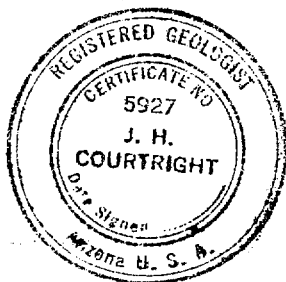
Five churn drill holes (around 200' depth) put down circa 1909 (nos. 1-5) all encountered disseminated pyrite which reportedly contained "no more than trace copper". Two 500' diamond drill holes put down in 1967, interspaced between old holes no. 1 and 2, averaged less than .03% copper. No. G-26 cut altered arkosic rock from 50' to the bottom at 515'. Oxidation and leaching extended to 175' where pyrite came in. No. G-27 also cut altered arkose, with some pebbly beds to

October 2, 1981

the bottom at 501'. Pyrite first appeared at 187'. All holes were located in section 11 and drilled vertically.

Considering the drill sample results and the generally unfavorable aspect of the leached outcrops, the area, in my judgement, holds no economic mineral potential.

Very truly yours,



J. H. Courtright
J. H. Courtright

JHC/sk

JHC

Addressee : US Dept. of the Interior
Bureau of Land Management
Federal Bldg.
Reno, Nevada 89509

check logs C-26 G-27
depth of $\frac{3}{4}$ rock type ?

T.12S., R.7E.

8

35000E



28043.85 N.
40966.00 E. S 89° 39' E TD-8 TD-9 (5277 Ft.) 28011.61 N.
46243.26 E.

N. 0° 3' W (5255 Ft.)

100	104	108	112	116	120	124	128
99	103	107	111	115	119	123	127
98	102	106	110	114	118	122	126
97	101	105	109	113	117	121	125
68	72	76	80	84	88	92	96
67	71	75	79	83	87	91	95
66	70	74	78	82	86	90	94
65	69	73	77	81	85	89	93
20	CDH-1 24	28	32	CDH-2 52	56	60	64
19	23	27	31	35	39	43	47
18	22	26	30	34	38	42	46
17	21	25	29	33	37	41	45
4	8	12	16	20	24	28	32
3	7	11	15	19	23	27	31
2	6	10	14	18	22	26	30
1	5	9	13	17	21	25	29
152	148	144	140	136	132	128	124
151	147	143	139	135	131	127	123
150	146	142	138	134	130	126	122
149	145	141	137	133	129	125	121

330

25000N

16

TD-7

N. 2° 0' N

22775.11 N.
46242.59 E.

22788.91 N.
40970.53 E.

S 89° 51' E
(5272 Ft.)

ASARCO

Surface 20 Rights Land

MILLSITE CLAIMS S.B.1 THRU S.B.152

SCALE 1" = 1000'

ASARCO INC.
Silver Bell Unit

PAGE 1 OF 2 Pages
COLLAR ELEV 2358.52

DATE COMPLETED 4/15/67
SURVEY COORD. 25,462.22N; 42,738.50E

TOTAL DEPTH 515.7'
INCLINATION Vertical

Depth	Interval	Specific Gravity	Core Recv. %	Core Assay %		Bench Elev & Depth	Ore Assay T B N S Cu Averages (weighted)	Composite Assays	Rock Classif.	REMARKS
				Total	Non-S					
17.0	17.0									
30.0	13.0	2.29	81	0.04		2340				
43.6	13.6	2.62	51	.01						
51.1	7.5	2.60	99	.01						
60.4	9.3	2.26	89	.01		2360	.02			
72.8	12.4	2.61	45	.01						
79.0	6.2	2.43	100	.01						
85.4	6.4	2.39	100	.01						
93.2	7.8	2.47	100	-						
102.4	9.2	2.49	96	.01		2760	.01			
112.6	10.2	2.41	85	-						
122.1	9.5	2.44	81	.01						
132.3	10.2	2.43	76	-		2770	.01			
139.3	7.0	2.49	88	.01						
150.7	11.4	2.39	94	.01						
161.8	11.1	2.49	92	.09						
175.0	13.2	2.43	86	.02		2780	.03			
185.0	10.0	2.52	84	.02						
195.2	10.2	2.54	78	.02						
207.3	12.1	2.49	72	.02						
214.5	7.2	2.56	100	.02		2790	.02			
222.0	7.5	2.55	99	.02						
230.3	8.3	2.62	90	.03						
239.0	8.7	2.43	100	.03						
246.8	7.8	2.66	93	.02						
254.2	7.4	2.60	96	.02		2790	.04			
261.5	7.3	2.63	77	.01						
272.4	10.9	2.62	93	.01						
281.5	9.1	2.66	98	.01						
293.9	12.4	2.69	97	.02						
297.7	3.8	2.75	100	.53 0.01		2800	.07			
308.1	10.4	2.69	97	.02						
313.2	5.1	2.67	100	.01						
322.5	9.3	2.66	95	.01						
331.6	9.1	2.62	98	.01		2820	.01			
341.1	9.5	2.68	91	.01						
350.0	8.9	2.76	94	.01						
359.0	9.0	2.63	99	.01						
367.5	8.5	2.67	94	.01						
376.6	9.1	2.72	94	.01		2820	.01			
385.5	8.9	2.70	98	.01						
392.6	7.1	2.72	93	.01						
401.5	8.9	2.72	99	.02						
410.9	9.4	2.77	93	.03						
419.8	8.9	2.69	100	.02		1990	.02			
428.3	8.5	2.68	100	.02						
436.5	8.2	2.68	98	.01						
443.2	6.7	2.72	92	.01						
454.6	11.4	2.60	98	.02		1990	.02			
463.6	9.0	2.60	98	.05						
470.2	6.6	2.61	93	.07						
472.5	2.3	2.45	100	.06						
481.5	9.0	2.70	100	.03						
490.4	8.9	2.76	97	.03						
499.4	9.0	2.65	95	.02			.04			

DD HOLE NO. G-26

TOTAL DEPTH 515.7'

INCLINATION Vertical

[illegible]

COMPOSITE DRILL LOG - ASARCO - SILVER BELL

DD HOLE NO G-
6-27

PAGE 1 OF 2 Page

DATE COMPLETED 4/25/67

TOTAL DEPTH 501.5'

COLLAR ELEV 2338.62

SURVEY COORD 25,508.55N; 43,808.60E

INCLINATION Vertical

Depth	Interval	Specific Gravity	Core Recv %	Core Assay %		Bench Elev & Depth	Ore Assay T B N S C U Averages (Weighted)	Composite Assays	Rock Classif	REMARKS
				Total	Non-S					
9.5	9.5	Rock	Bit							
18.9	9.4	2.49	82	0.01						
32.0	13.1	2.50	60	.02						
40.8	8.3	2.36	95	.02		2300	.02			
49.3	8.5	2.17	88	.04						
52.7	9.4	2.49	75	.02						
67.2	8.3	2.53	87	.03						
76.0	8.8	2.59	88	.01		2260	.02			
84.1	8.1	2.57	92	.01						
92.0	8.3	2.71	95	N11						
101.3	8.7	2.30	92	N11						
110.7	7.4	2.32	89	.01		2220	NIL			
119.9	9.2	2.48	91	N11						
128.7	9.8	2.20	94	N11						
142.8	13.1	2.49	81	.004						
151.7	8.9	2.57	82	N11		2180	NIL			
160.6	8.9	2.35	100	N11						
169.1	8.5	2.39	98	N11						
179.4	10.3	2.32	70	N11						
187.3	7.2	2.62	91	N11						
195.2	7.9	2.37	87	.02		2140	NIL			
202.1	6.9	2.49	84	N11						
210.8	8.7	2.54	100	.01						
220.1	9.3	2.39	94	.01						
228.8	8.7	2.35	100	N11						
238.3	7.5	2.42	83	N11		2100	NIL			
245.3	9.0	2.48	90	N11						
253.6	8.3	2.64	90	.006						
261.7	8.1	2.54	91	N11						
270.1	8.4	2.53	92	N11						
278.5	8.4	2.65	92	.0020		2060	NIL			
286.0	7.5	2.59	95	N11						
289.7	3.7	2.47	100	N11						
296.6	6.9	2.68	100	N11						
305.0	8.4	2.58	95	.01						
314.9	9.0	2.62	95	N11		2020	NIL			
322.9	9.9	2.69	91	N11						
331.8	8.9	2.74	91	N11						
344.0	8.5	2.65	91	.01						
351.8	11.5	2.67	75	.01		1980	.01			
360.3	8.5	2.62	95	N11						
367.8	7.5	2.67	91	.01						
377.3	9.5	2.68	93	N11						
387.1	9.8	2.66	89	N11						
395.8	8.7	2.62	100	N11		1940	NIL			
404.1	8.3	2.64	97	N11						
412.7	8.6	2.69	95	N11						
419.4	6.7	2.68	93	N11						
428.1	8.7	2.68	96	N11						
436.2	8.1	2.71	90	N11		1920	NIL			
445.1	8.9	2.53	100	N11						
452.0	6.9	2.68	95	.01						
461.3	9.3	2.71	96	.01						
470.0	8.7	2.68	92	N11						
479.8	9.8	2.68	88	N11			NIL			

DD HOLE NO. G-2

DATE COMPLETED 4/25/67

TOTAL DEPTH 501.5'

SURVEY COORD. 25,508.55N; 43,808.60E

INCLINATION Vertical

[illegible]

1206 PACIFIC MUTUAL BUILDING
Los Angeles 14, California
Telephone Mutual 8251

August 2, 1948

Mr. A.E. Ring, Manager
Southwestern Division
Western Mining Department
American Smelting and Refining Co.,
Valley National Bank Building
Tucson, Arizona

Re: ALCHEMIST GROUP
(Formerly Beck Group)
Pima County, Arizona

Dear Mr. Ring:

After looking through our files, I find that I cannot add to the information given to you by Mr. Mudd about the drill holes on the above property. Much of the file was evidently destroyed years ago. In any event I found a letter dictated by Col. Mudd, in 1913, in which he makes reference to a statement in one of my letters to the effect that no ore was found in Holes Nos. 1 to 6.

In looking over a map to refresh my memory, I find that Holes Nos. 1 to 5 were drilled down in the flat country on claims located by me or under my direction. Some of these holes encountered heavy disseminations of pyrite carrying no trace of copper. Hole No. 6 was at the foot of the rolling hills and, as I recall it, nothing of interest was found in this hole.

The best showing of copper was in Hole No. 15 and in this vicinity Holes 10, 11, 14, 17 and 18 were drilled, but the copper content was not great enough to encourage further drilling.

I am sorry that I cannot give you something more specific.

Very truly yours,

/s/ ROY W. MOORE
General Manager
CORONADO COPPER AND ZINC COMPANY

RWM:en

Copied at Tucson, August 6, 1948

C
O
P
Y

SEELEY W. MUDD
ENGINEER OF MINES
Los Angeles, Cal.

Octo. 11, 1913

Mr. Walter Douglas,
Bisbee, Arizona

My dear Mr. Douglas:

ALCHEMIST GROUP:- I enclose herewith small map and records of drill holes 7 to 18 inclusive. Similar records of holes 1 to 6 inclusive have not been found. I find however, in a letter dated October 4, 1909, from Mr. Roy W. Moore, who was in charge of the work there for me, the following:-

"Hole No. 6 on the Beck ground is carried to a depth of 115 ft., and 65 ft. into pyrite - no trace of copper. The formation is blue gray, the same as the rock you saw in the fissure shaft."

Mr. Moore tells me that the first six holes showed little or nothing of value, and this coincides with my recollection. As the first five holes are not located on the Higgins ground, as you will see from the map, I have not had the search for the records of these holes continued. If however, you desire the detail with regard to these, I will have the box of papers looked over again in an effort to secure it.

The best results were obtained in hole 15, and you will notice that several holes were put down in the immediate vicinity in the hope that better results might be obtained.

I do not remember the details, but I am confident the first five holes gave very little encouragement indeed.

I hope you will feel at liberty to keep these papers as long as you choose, or to copy them if you prefer, but when you have finished with them, I would be obliged if you would return them.

If I can do anything further in this matter for you, it will be a great pleasure to do so.

Sincerely yours,

/s/ S.W. Mudd.

Encl.

AMERICAN SMELTING AND REFINING COMPANY
SILVER BELL UNIT
Silver Bell, Arizona

July 24, 1970

RECORDED PRINT
DO NOT
REMOVE FROM FILE

DRILL HOLE DATA OF THE SILVER BELL DISTRICT

*Silver Bell
Library*

INTRODUCTION:

Collectively presented in this report are several specific geologic and mineralogic patterns in the Silver Bell District. The purpose of the overlays was to collect and coherently present district subsurface trends that could be compared at identical scales with known surface trends. These subsurface trends have been detailed using drill hole data. Analysis of these trends should be important in future surface and drilling exploration programs at Silver Bell. This report is not intended to directly assist the engineer in pit and dump planning; but, may be useful in these aspects. Some of the data included is available on various other maps with various scales.

DRILL HOLE INFORMATION:

ASARCO has drill hole data from nearly 1000 churn and diamond drill holes in the Silver Bell district (Table I). Other holes doubtlessly have been drilled on ASARCO owned property; but information on these holes is not available.

Information for all holes located outside the pit perimeter was included in this report; the only exceptions are G-26, G-27, and the 600 drill series, all of which are off the eastern edge of the overlays and, as shown in Appendix I, are nearly barren ($<0.05\%$ Cu). In addition, information from drill holes near, but inside, the pit perimeter was also used. Data from drill holes in the inner zones of the pits were not incorporated. The inner zones included the original Oxide and El Tiro pits; West Extension #1, East Extension #1 and #2, and the Southeast Extension (not yet on reserve) of the Oxide pit; and East Extension #1 in the El Tiro pit. Inner zones with only partial use of drill hole data included the North Extension (Daisy Area) and the East Extension #2 (Imperial Area) of the El Tiro pit. All information presented was taken directly from the geologic drill logs.

Some of the churn drill hole locations were plotted from map S-11-4D, the others were plotted from log data. Most of the diamond drill hole locations were plotted from a map by R. C. Edmiston dated 8/69. All drill hole locations were checked.

SILVER BELL C.D. HOLES

[illegible]

feels that displacement along this fault was not great and that movement along it was probably, for the most part, pre-monzonite porphyry.

Structural relationships among certain of the rock units are not totally clear. As has been indicated, faulting in the earlier Cretaceous sediments is rather extensive, and thus no complete sequence has yet been pieced together. Very little folding occurs in these sediments.

The structural relationship between the Silver Bell andesite flows and interbedded Mount Lord ignimbrite and Claflin Ranch sediments in the main tailings pond area is also uncertain. Strikes and dips of these units are uniform, but the different rock types project into each other along strike-length. Flexing a fault between these units requires considerable imagination, particularly since there is no place for a fault west of the upper tailings pond. There is a suggestion in the strikes and dips of the pyroclastics that these materials accumulated in a topographic low on the Silver Bell andesite terrane.

The most anomalous structural situation is the existence of the great mass of steeply-dipping Mount Lord ignimbrite north and west of the upper tailings pond and extending under the plantsite. The writer feels that this ignimbrite possesses definite intrusive aspects and suggests that this area of outcrop represents the upper portion of a source vent for the Mount Lord ignimbrite.

ECONOMIC POSSIBILITIES

Playter (1948) has already mapped alteration in the area east of Oxide pit, and no further alteration mapping was felt to be necessary in this study. The area of economic potential can be immediately narrowed down to the zone of alteration. The churn drill holes indicated on Plate I were put down by Harvey Mudd interests in 1909, and the results show only sporadic pockets of good porphyry copper mineralization.

In the eastern portion of the zone of alteration, it is common to come across small isolated areas exhibiting live limonite in the capping. The only untested area offering any possibility of sizeable tonnage is upstream to the north of churn drill hole 8. This area has been indicated as a possible target by Playter on his alteration map. Capping here is locally of interest, but overall would condemn the area as a "longshot" under present economic conditions.

BARRY N. WATSON

Attachment: Plate I
cc: 2 - Silver Bell
2 - Tucson Office

602-297-5733

October 5, 1981

R. B. Crist, Property Engineer
Asarco, Inc.
P. O. Box 5747
Tucson, AZ 85703

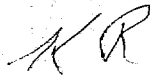
S.B. Mill Claims

Dear Sir:

Enclosed are:

- (1) The original & 1 xerox copy of my rep. on the "mineral character" of the subject claims, as requested by Mr. Courtright in your behalf.
- (2) The 7 items listed in my rep. which were loaned to me by Mr. Courtright.
- (3) My statement.

Yours very truly,



Kenyon Richard

KR/mm
encls.

602 - 297-5733

October 1, 1981

U. S. Department of the Interior
Bureau of Land Management
Federal Building
Reno, Nevada 89509

Silver Bell
Millsite Claims
S.B.1 Thru S.B.152
(N $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 20, & E $\frac{1}{2}$ N $\frac{1}{2}$
NW $\frac{1}{4}$ Sec 20, & Sec 17, all in
T12S, R7E.)

Gentlemen:

Conclusion:

The subject claims do not contain any mineralized zones having commercial ore possibilities of any kind. In that regard, then, the area is non-mineral.

General:

During the late '40's & '50's I was stationed in Tucson & closely connected w/all explor. work at S.Bell. Many dozens of trips to the district were made, & my traverses covered all significant portions of the district & surrounding areas.

(Actually, although it was Courtright's project & he wrote the definitive rep. (4/29/54), I helped him map the area from near the Oxide Pit eastward (&ESE.) to the Cocio Ranch area. The area of the S.B. Mill Claims is within this mapped area, & I made many traverses over all parts of that Mill Claims area at that time as well as later as more was learned about the district's geol.)

In the mid-60's I was somewhat in touch w/S.B. explor. work, being stationed in Asarco's N.Y. explor.-mng. offices.

In late '67 I returned to Tucson & opened a consulting practice in mng. geol. During the ensuing yrs. essentially all of my consulting work was in foreign countries. This foreign professional work did not prevent me from keeping up, generally, w/local explor. work in districts with which I had been familiar.

Because of this natural continued interest in ore deposits of the SW., I've made many visits to S.B. during the past 14 yrs. This was done to satisfy my curiosity as mng. progressed & new geol. evidence & ideas evolved. (These periodic visits were made w/Asarco's permission, but not in any official Asarco capacity.)

The foregoing explanation may seem overly elaborate, but it is included to establish my credibility insofar as having had a fairly continuous 35-yr. acquaintance w/the accumulation & evolution of knowledge about all of the S.B. district's ore body occurrences.

For purposes of compiling this rep., Asarco has provided me w/the following data, listed about in order of "explor." importance:

- (1) Geol. Map E. ext. - 1" = 500'
- (2) Courtright Rep. & my covering letter, both dated 4/29/54, to Landwehr, Ch. Geol., American Smelting and Refining Co., W. Mng. Dept., describing the geol. map (item (1) above) & its explor. significance.
- (3) Two sets of logs of 2 coreholes, G26 & G27, 516' & 501' in depth; drilled 4/67; core recov. avg. approx. 90%; continuous core assays.
- (4) Copy of letter by Moore, 8/2/48, w/his recollections of 6 holes, 5 of which are in the S.B. Mill claims area drilled under his direction in 1909....logs & records lost.
- (5) Copy of letter dated 10/11/13 by Seeley Mudd quoting some opinions of Moore.
- (6) Pages 1 & 8 (only) of rep., 7/24/70, by Watson, "Drill Hole Data of the S.B. Dist."
- (7) Tabulation of C.D. Holes (1-5, 6 thru 18), S.B., by Seeley Mudd, 1911.

(For the most part this material, particularly item (1), served to sharpen my memory; but items (6) & (7) have not helped much.)

The weak, E. tail of the S.B. alt. zone traverses ESE. from the Oxide ore body thru Sec. 17 of the S.B. Mill Claims. The W. side of this claim group is about 3 mi. E. of the main Oxide ore body. From the Oxide ore body on ESE. the alt. zone becomes narrower; it feathers out into small, E. to ENE.-trending, inconsequential branches along its N. side & a few on its S. side; its alteration & sulfide content becomes less & less; & it becomes narrower, ranging in N.S. width from 600' to 2000' (avg. about 1000') within the S.B. Mill Claim Group in contrast to 4000' N.S. width at Oxide, & to 7000' E-W. width at the El Tiro ore body.

A couple of small, faulted blocks of weakly alt. rks. occur N. of the main alt. zone but within the N. edge of the S.B. Mill Claim Group; these showings, however, are of no significance.

This alt. zone occupies a shallow valley where crossing the S.B. Mill Claims. Outcrops are a bit wide-spaced there. They are, however, sufficiently close that it is apparent most of the rks. within the alt. zone are Cret. sed. (arkoses, mostly, w/some sh. & conglom.).

The rks. in the low hills on the N. & S. sides of the alt. zone in the small valley consist mostly of andesite por., conglom. & rhyolite (pyroclastic). All probably are of early Tert. age. Structural relationships among these rk. formations may be complex, but that is not important because they are generally underlain by Cret. sed. like those seen in outcrops within the alt. zone in the small valley.

The mineralogical descriptions & rks. class. are not clearly drafted on the geol. logs; but the data are good enough that the foregoing statement applies, except for shallow intercepts of andesite in G-26 & rhy. in G-27. One thin dike of monz. was recorded. The base of complete leaching is at 151' in G-26, & at 161' in G-27.

A few NE.-trending, narrow & discontinuous monz. por. dikes occur, mostly in the low hills. None of these dikes in the S.B. Claims is alt. Farther W. toward the Oxide center of mineralization, all of the por. dikes are alt. Also, monz. por. in larger bodies occurs either as part of, or close by, all of the ore bodies in the district. The genetic connection between bodies of alt. monz. por. & the occurrence of Cu in significant amounts is clear. If there were appreciable occurrences of Cu anywhere within the S.B. Mill Claims, & to depths of 1000' or 2000', all of those outcropping monz. por. dikes (& their wall-rks.) in the Claims area would be strongly alt. & would contain abundant limonites-after-Cu sulfides. Also, much larger bodies of alt. monz. por. would be present & would contain appreciable amounts of limonites-after-Cu sulfide.

The Cret. sed. rks. (noted above) which occupy the main alt. zone are weakly alt. to clay minerals & minor sericite. Limonites-after pyrite are seen in very sparse, dissem. tiny cavities & thin veinlets in the sed. rks. & in a couple of small monz. por. outcrops. On the geol. map only one shallow pit & one outcrop are noted as having "some limonite-after-chalcocite". This latter type of lim. corresponds w/the single assay (11' @ .09 Cu....chalcocite...top of sulph., G-26), (item (3), above). Also, in hole G-26 at 298', 3.8' assayed .63 Cu as chalcopyrite. Excepting 5 other short intervals w/assays ranging from .05 to .09 Cu, both holes assayed nil. to .03 Cu from collar to bottom.

The letters (items (4) & (5) & the tabulation (item (7))) state that churn drill holes 1 thru 5, which were drilled by Seeley Mudd in 1909, encountered "only pyrite" w/"no traces of Cu". According to the geol. map at least 4 of those holes are on the S.B. Mill Claims, 3 of them being in the zone of alt. (at the time the geol. mapping was done, only one of these C.D. hole locations was found. There is no reason, however, to doubt that the holes were drilled. Being in a flatish valley,

U. S. Department of the Interior
Page 4
October 1, 1981

the evidence of their existence was simply washed away in the intervening decades. The locations of most of the many holes (150?) drilled by Seeley Mudd in those early days (a phenomenal program, incidentally) have been found, & those field locations check w/old maps & other records.

Although the logs are missing, the comments about "pyrite" in the letters noted above are germane. The limonites in the leached outcrops within the alt. zone are characteristic of the occurrence of only pyrite prior to leaching. A half-doz. small spots of Cu-stain are noted on the geol. map. Minor, very wide-spaced showings like these are fairly common throughout the district. These have no significance anywhere in the S.B. alt. zone, or practically any other por. Cu district either, for that matter, in regard to ore occurrence.

Yours very truly,



Kenyon Richard

KR/mm

cc: R. B. Crist - extra

✓bcc: J. H. Courtright - Tucson Office, Asarco