CUCOMUNGA CANYON

Esmeralda County, Nevada, USA

Other names:

Location: West side of Cucomunga Canyon near California line; SW$\frac{1}{4}$ Sec. 5, T. 7 S., R. 39 E.

Molybdenum production: None.

Development: Small pit.

Geology: MOLYBDENITE occurs in quartz veins cutting "Cottonwood" quartz monzonite.

****

** New occurrence; not described in Rpt. 2.

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E-Z SORT SYSTEMS - STANDARD No. 3810 D E-Z SORT SYSTEMS, LTD., SAN FRANCISCO 5, CALIF. U.S. PATENTS NOS. 2.198.127 - 2.339.519 - 2.424.053 - 2.490.156 - 2.515.424 - 2.531.786 PLUS CANADIAN & PATS. PEND.

100+

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Item 24

ROBERT A. ZELLER, JR.
Consulting Geologist

P. O. BOX 1
HACHITA, NEW MEXICO
88040

October 10, 1969

Geochemical Sampling in the Cucomungo Spring Area, Nevada

During the late summer a program of detailed geochemical sampling was carried out in the Cucomungo Spring area under the direction of R. A. Zeller. The primary purpose of the survey was to determine the distribution of molybdenum in the vicinity of the Cucomungo Spring molybdenum deposit. The molybdenum distribution is to be related to various geologic formations and features to determine, if possible, the geologic factors that control molybdenum distribution. Also, areas of molybdenum concentration may be potential drilling sites. The distribution of other elements with respect to the molybdenum deposit is also of interest.

The surveys were conducted by Mr. Ray Cobos, who is experienced in geochemical sampling and in geologic field work. Cobos was assisted by Mario Johnson.

As no suitable base map was available for the detailed sampling, aerial photographs on a scale of about 1 inch to 1000 feet were used. A grid was ruled on the contact prints. By use of a stereoscope and the overlapping prints, the grid intersections were located on the ground. Samples were taken as near to the intersections as possible with primary attention given to collecting samples of good quality. Throughout most of the area sampling was done on an approximate 500-foot spacing. This spacing varies somewhat from areas of high elevation to areas of low elevation. The alluvial covered area northwest of the molybdenum prospect was sampled on a 1000-foot grid.

Several surveys were made. The most important was the Poison Spring survey concentrated in and near the Poison Spring or Cucomungo Spring molybdenum prospect. The samples of this survey are labeled with a "PS" prefix. Residual soil samples were sought. Soil collected on hill slopes that was derived from no more than a few hundred feet up-slope is called "slope wash"; alluvium, for the purpose of this survey, is material that moved from greater distances and which usually consists of rock types other than that underlying the station. Soil samples were collected at a depth of one foot. At stations where bedrock crops out nearby, bedrock samples were collected. Bedrock samples are labeled with the station number suffixed by "B". All stations in the field are marked with lath and flagged.

A traverse was made along the crest of the ridge west of Uncle Sam Canyon. These samples are labeled with a "US" prefix; the bedrock samples have a "B" suffix.

A stream sediment reconnaissance survey was made in Copper Canyon. The sample locations are plotted on aerial photographs that accompany this report. The Copper Canyon samples are labeled with a "CC" prefix.

A typed copy of Cobos' field notes is included with this report. For soil samples the type of soil and the type of underlying bedrock are listed.

Geochem. Sampling, Cucomungo Spring area, continued

For bedrock samples the type of bedrock is listed.

A sample map showing the location of all but the Copper Canyon sample stations has been prepared and has been sent under seperate cover. Sample stations were projected from the aerial photographs to a contour map prepared by Bear Creek Mining Company. Due to uncorrected photo distortion, the sample locations are not accurately located on the base map. Accurate plotting would require photogrammetric methods.

A series of check samples was included with the samples sent for analysis. Soil and stream sediment samples were selected at random and split, and the split portions were included under different numbers. A list of the check samples is included with this report.

The soil and stream sediment samples were screened to minus 20 mesh using a plastic screen prior to sending to the lab. Care was taken in the screening and in all other handling of samples to prevent contamination and errors.

Robert A. Zeller, Jr.

Robert A. Zeller, Jr.

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Item 24

March 28, 1961

Mr. Clark Burchfiel
Department of Geology
Yale University
New Haven, Connecticut

Dear Mr. Burchfiel:

Thank you for sending the correlation chart and the accompanying information.

To my knowledge no one is working in the Magruder Mtn. quadrangle at the present time on any detailed problems. As you may know, the Bear Creek Mining Co. has taken over the old Siskon molybdenum property and are exploring it now. I was on the property last January and they had three deep diamond drill rigs, but naturally they were not too conversant about what they had found. This would be at the head of Alum Creek in and around Sec. 3, T. 7 S., R. 39 E.

One of our Mining Geologists, Mr. John H. Schilling, plans to do some work in a month or so on this molybdenum occurrence, but no areal work in the quadrangle is contemplated.

John Albers, U. S. Geological Survey, is mapping Esmeralda County in cooperation with our organization. The map, part of a series of county studies, will be published at 1:250,000 scale, but I understand he is field mapping at a much larger scale.

You might also write Chuck Meyer at Berkeley to see if any of his students are in the area. One named Moiola is somewhere near this quadrangle as I understand it, but until I hear from him I do not know the exact area which he is mapping.

We will be deeply appreciative of receiving a copy of your thesis for the Mackay School of Mines Library.

Very truly yours,

Richard H. Olson
Economic Geologist

RHO:hm

cc: John H. Schilling

The N. half of Magruder Mtn. quad. is being mapped by Edwin H. McKee as a thesis at Cal. — has been submitted to John Albers at USGS

done 1962

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Item 24

April 21, 1961

Mr. Al Haworth
Bear Creek Mining Company
2601 North First Street
Tucson, Arizona

Dear Mr. Haworth:

Recently S. E. Jerome, Associate Director of the Nevada Bureau of Mines, contacted Paul Bailly, via Ray Robinson, about my visiting your Cucamonga, Nevada, molybdenum prospect. He has replied that this would be OK, and to contact you about making arrangements.

I hope, in the near future, to prepare a map showing molybdenum occurrences in Nevada and compile a report describing very briefly each occurrence. Much of the data in the report will be taken from published sources, but there is so little published information about Cucamonga that this cannot be done. Later, I will make a much more detailed study of moly deposits in the State, their distribution, and relation to other geologic features. But for now I am interested only in gaining a general picture of the deposit. We, of course, will submit any description of the prospect to Bear Creek for approval before publication.

I am free to visit Cucamonga any time except May 12 to 17 and June 8 to 19; please set a date that suits your convenience.

Cordially yours,

John H. Schilling
Mining Geologist

JHS:gx

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Item 24

BEAR CREEK MINING COMPANY

SOUTHWEST DISTRICT
2601 NORTH FIRST AVENUE
TUCSON, ARIZONA
MAIN 4-5547

April 27, 1961

Mr. John H. Schilling
Nevada Bureau of Mines
University of Nevada
Reno, Nevada

Dear Sir:

We would be pleased to have you visit our Cucamonga prospect. From your letter of April 21, we note that such a visit would be convenient to you any time except May 12 to 17 and June 8 to 19.

Mr. Dewey Walker is Geologist in charge at Cucamonga for Bear Creek and is generally there or at our Lida trailer camp. They do not get mail every day but usually pick it up on Wednesday and during week end.

For the convenience of all then I suggest any day between May 1, and 5th or on May 18. If you are able to drop Dewey Walker a card at P.O. Box 466, Goldfield, Nevada, previous to your visit, notifying him of your plan, he can be present when you arrive. If you do not have time to so notify him they will by copy of this letter be expecting you during the days mentioned.

There are Siskon Molly Corporation signs posted, leading into the area where you will see some of our staff.

Very truly yours,

A H Haworth
A. H. Haworth

AHH:bjm

cc: P.A. Bailly
B.D. Walker

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Item 29

May 2, 1961

Mr. Dewey Walker
Bear Creek Mining Company
P. O. Box 466
Goldfield, Nevada

Dear Mr. Walker:

Recently I contacted Mr. Haworth about visiting Bear Creek's Cucamonga prospect. In his letter of April 17th (with copy to you), he suggested several dates and suggested that I notify you, if time permitted.

Thursday, May 18th, would be fine with me. I would plan to stay overnight in Goldfield, and drive out to Lida or Cucamonga early enough on the 18th to meet you whenever it would be most convenient.

W

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Item 24

May 2, 1961

Mr. Dewey Walker
Bear Creek Mining Company
Post Office Box 466
Goldfield, Nevada

Dear Mr. Walker:

Recently I contacted Mr. Haworth about visiting Bear Creek's Cucamonga prospect. In his letter of April 17th (with copy to you), he suggested several dates and that I notify you, if time permitted.

Thursday, May 18th, would be fine with me. I would plan to stay overnight in Goldfield, and drive out to Lida or Cucamonga early enough on the 18th to meet you whenever it would be most convenient. A one day visit is all I planned at this time.

Would this be OK? If the 18th is in anyway inconvenient, a later date would be just as good. Please let me know when and where to meet you.

I'm looking forward with great pleasure to meeting you and seeing the Cucamonga prospect.

Cordially yours,

John A. Schilling
Mining Geologist

JAS:gc

cc: A. H. Haworth

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Item 24

Post Office Box 466
Goldfield,
Nevada

May 5, 1961.

Mr. John H. Schilling
Nevada Bureau of Mines
University of Nevada
Reno,
Nevada

Dear Mr. Schilling:

With reference to letter of May 2, 1961, please be advised that the date of May 18, 1961, is acceptable for our meeting. I suggest that we meet at our trailer camp at Lida. As this camp constitutes a goodly portion of that community I am certain that you shall have no difficulty in locating it.

Yours very truly,

Bryant D. Walker

Bryant D. Walker

cc: Mr. A. H. Haworth

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Item 24

May 29, 1961

Mr. Bryant D. Walker
P. O. Box 466
Goldfield, Nevada

Dear Dewey:

Attached is what I've written about the Cucamunga deposit from my notes. No attempt has been made to polish it at this stage. Would appreciate your checking it over, and making corrections and additions. I'm sure you'll find that quite a number are needed.

When you return the corrected copy, I'll rewrite it in the form we plan to publish it, which will be a much condensed version. This condensed version will be sent to Bear Creek for approval prior to publication. So the copy attached is sent only for "editing". I prefer to start with an inflated manuscript and chop, rather than expand. The manuscript should state what you told me about the deposit; any deviations are unintentional.

Again, I want to thank you and the rest of the crew for making the visit such a pleasant and profitable one. I find that there are no copies of the Questa report here, but will send you one as soon as I get more.

Best regards,

John H. Schilling
Mining Geologist

JHS:hm

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Item 24

May 29, 1961

Mr. A. H. Haworth
Bear Creek Mining Company
2601 North First Street
Tucson, Arizona

Dear Mr. Haworth:

I want to thank you for arranging my visit to Cucamonga. Dewey Walker and the rest of the crew went out of their way to make the visit both profitable and pleasant. It is a fascinating deposit in a spectacular and beautiful setting, and reminded me in many ways of Questa, New Mexico.

Sincerely,

John H. Schilling
Mining Geologist

JHS:hm

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Item 24

June 20, 1961

Mr. Bryant D. Walker
P. O. Box 466
Goldfield, Nevada

Dear Dewey:

Thank you very much for going over my scribblings on Cucamunga, and for your reconstruction of the sequence of events that took place.

I have now written up the deposit as it will appear in our proposed :inventory of molybdenum occurrences in Nevada" report. Could you check it over and make any necessary changes so that it is an accurate description of the deposit as you see it, and forward a copy to Tuscon for Bear Creek's approval for publication.

Best regards,

John H. Schilling
Mining Geologist

JHS:hm

enc. Cucamunga reports (2)
Press releases

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Item 24

BEAR CREEK MINING COMPANY
SOUTHWEST DISTRICT
2601 NORTH FIRST AVENUE
TUCSON, ARIZONA
MAIN 4-5547

July 21, 1961

Mr. John H. Schilling
Mining Geologist
Nevada Bureau of Mines
Reno, Nevada

Dear Mr. Schilling:

We have reviewed the write up of the Cucamonga Deposit you sent to Dewey Walker on June 20 which you propose including in your "inventory of molybdenum occurrences in Nevada".

The only changes we have are two minor ones, which we have underlined on the enclosed copy of the text.

With these changes, we have no further comments on your using it as proposed.

Very truly yours,

Thomas N. Walthier

Thomas N. Walthier

TNW:sh

encl.

41. CUCOMONGO DEPOSIT

Other names: Alum Gulch deposit; Tule Canyon deposit; Poison Spring deposit; Sorensen and Roper properties; Siskon property, Chessher property; Cucamonga deposit; Alum Creek deposit.

Location: Mainly in Secs. 2 and 3, T. 7 S., R. 39 E.

Molybdenum production: None

Development: Roper adit (approximately 900 feet long including several short laterals), drill holes, and extensive roads made while exploring for molybdenum.

Geology: A northwest-trending "zone of weakness", a thousand feet wide and several miles long, occurs in "Cottonwood" quartz monzonite along the contact with a wedge of metasediments which separate the quartz monzonite from a stock of older "Uncle Sam" quartz monzonite porphyry to the southwest. The rocks within the zone have been silicified sericitized, and argillized. Flakes and rosettes of MOLYBDENITE are sparsely disseminated through the silicified and sericitized Cottonwood quartz monzonite and along the edges of quartz veinlets in the altered Cottonwood quartz monzonite. Pyrite also is present, but copper minerals are almost completely absent. "Limonite", iron sulfate, jarosite, and other oxidation products are abundant at the surface but molybdenite and pyrite are also found. Yellow ferrimolybdite (?) is present but difficult to distinguish from the other yellow secondary minerals. Abundant dark blue ILSEMENITE (?) is forming on the dump of the Roper adit, and occurs along a fault zone in the altered area. The water from Poison Spring and Roper adit contains appreciable amounts of MOLYBDENUM.

Base Map: U.S. Geological Survey, Magruder Mtn. 15-minute topographic quadrangle map.

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Item 24

August 15, 1961

Mr. Bryant D. Walker, Geologist
Bear Creek Mining Company
719-721 East Copper
Tucson, Arizona

Dear Dewey:

Just a very belated thanks for the cores. We got them back here without any trouble. Is there any chance of getting copies of your logs (especially assays and rock types) of the holes?

I'm enclosing a copy of the "moly occurrence" map.

Best regards,

John H. Schilling
Mining Geologist

encl: map

(102)
Item 24

GEOCHEMICAL SURVEYS
2505 TURTLE CREEK BOULEVARD
DALLAS, TEXAS 75219

MAILING ADDRESS
P. O. BOX 19508

TELEPHONE
521-5145

October 16, 1969

Mr. John H. Schilling
Mackay School of Mines
University of Nevada
Reno, Nevada

Dear John:

Just a note to let you know that we have purchased all of the Sorenson claims at Cucomungo Springs area. Bob Zeller has done detailed geological and geochemical work and at sometime in the near future we are going to do some additional prospecting, including drilling. Bob and possibly I will be by to see you sometime in the next few weeks.

Best regards,

Bill

W. R. Ransone

WRR/es

L. LORE WARTES
CONSULTING ENGINEER AND GEOLOGIST

ELISE Y. WARTES
SEC'Y.-TREAS.

N. S. P. E.
A. S. H. R. A. E.
A. S. A. E.
S. A. M. E.

August 29, 1969

PLEASE SEND REPLY TO:
~~[illegible]~~

550 East 12th Ave.
Denver, Colo. 80203
Tel: 303-255-6062

Mr. John Schilling, Mining Engineer
Nevada Bureau of Mines
Mackay School of Mines
Reno, Nevada

Dear Mr. Schilling:

In accordance with Mr. Wartes' conversation with you yesterday, you are hereby authorized and welcome to give his name and address and telephone number to the parties who have expressed an interest in the Sorenson molybdenum prospect.

Sincerely,

Elise Y. Wartes

Elise Y. Wartes
Exec. Sec'y

Dr. Pierre-Paul Barr
(with)
David Hutchinson P.E.
(Jr.)

Ref.

Lloyd Love Waters

Lloyd Waters

Aug. 25, 69

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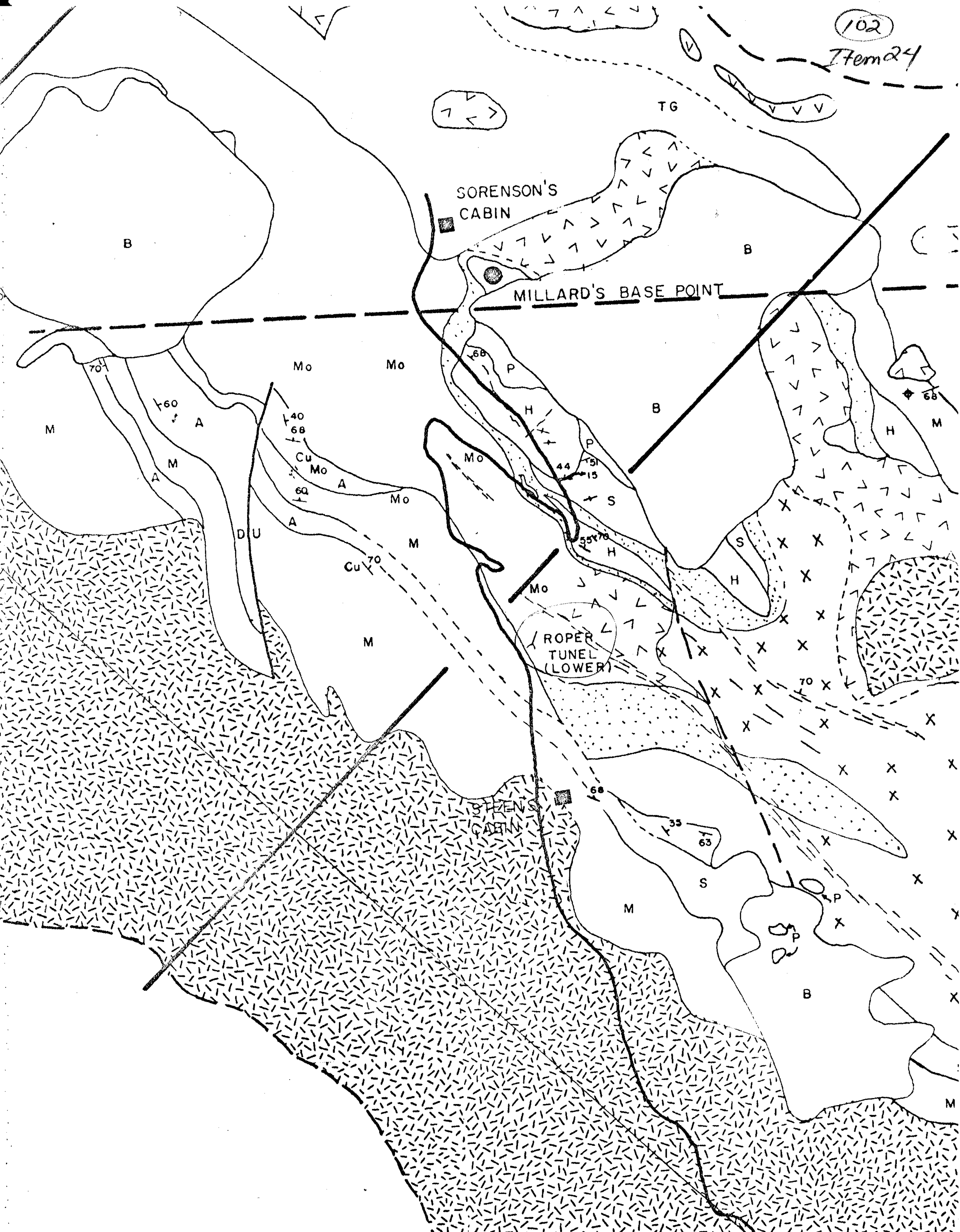
SORENSON'S CABIN
MILLARD'S BASE POINT
ROPER TUNEL (LOWER)
STEENS CABIN
TG
B
Mo
M
A
Cu
D U
P
H
S

Field Notes on soil and bedrock samples, Cucomungo Spring Area, Nevada

Soil sample no.	Type of soil	Underlying bedrock
PS-1	residual soil & alluvium	Cottonwood granite (float of andesite)
PS-2	residual soil	granitic rock
PS-3	residual soil	granite
PS-4	residual soil	granite
PS-5	residual soil	granite
PS-6	residual siol	granite
PS-7	slope wash	andesite
PS-8	slope wash	andesite
PS-9	residual soil	andesite
PS-10	residual soil	Cottonwood granite; altered
PS-11	residual soil	Cottonwood granite; altered
PS-12	residual soil	Cottonwood grantie; sericitic alteration
PS-13	Residual soil	Cottonwood grentie; sericitic alteration
PS-14	residual soil	Cottonwood granite; sericitic alteration
PS-15	residual soil	Cottonwood granite; sericitic alteration
PS-16	residual soil	Cottonwood granite; sericitic alteration
PS-17	residual soil	Cottonwood granite; sericitic alteration
PS-18	residual soil	Cottonwood granite; sericitic alteration
PS-19	residual soil	Cottonwood granite; sericitic alteration
PS-20	slope wash	andesite
PS-21	residual soil	andesite
PS-22	residual soil	altered Cottonwood granite
PS-23	residual soil	hornfels
PS-24	residual soil	altered Cottonwood granite; sericite
PS-25	residual soil & slope wash	Cottonwood granite
PS-26	residual soil & slope wash	hornfels
PS-27	slope wash	hornfels
PS-28	residual soil	altered limestone(?)
PS-29	slope wash	hornfels
PS-30	residual soil	altered Cottonwood granite
PS-31	slope wash	Cottonwood grantie
PS-32	residual soil & slope wash	Cottonwood granite
PS-33	residual soil & slope wash	Cottonwood granite
PS-34	slope wash	Cottonwood granite
PS-35	residual soil &slope wash	altered Cottonwood granite; much pyrite
PS-36	residual soil	altered Cottonwood granite
PS-37	residual soil	Cottonwood granite; sericite alteration
PS-38	residual soil & slope wash	Cottonwood granite; sericite alteration
PS-39	residual soil & slope wash	andesite
PS-40	slope wash	andesite
PS-41	slope wash	shale; phyllite alteration
PS-42	residual soil	Cottonwood granite; [illegible]

Soil sample no.	Type of soil	Underlying bedrock
PS-44	residual soil -	Cottonwood granite;highly altered
PS-45	residual soil	Cottonwood granite; highly altered
PS-46	slope wash	Cottonwood granite; highly altered
PS-47	slope wash	Cottonwood granite; highly altered
PS-48	slope wash	altered limestone
PS-49	slope wash	altered limestone
PS-50	residual soil	Cottonwood granite; highly altered
PS-51	slope wash	Cottonwood granite (float of altered limestone)
PS-52	residual soil & slope wash	Cottonwood granite; altered
PS-53	residual soil & slope wash	Cottonwood granite; altered
PS-54	alluvium	Cottonwood granite float
PS-55	residual soil & slope wash	Cottonwood granite & altered limestone float
PS-56	slope wash	Uncle Sam granite
PS-57	slope wash & residual soil	altered limestone
PS-58	residual soil & slope wash	altered limestone
PS-59	slope wash	Cottonwood granite
PS-60	residual soil & slope wash	limestone
PS-61	residual soil & slope wash	Cottonwood granite (float of limestone)
PS-62	residual soil	altered limestone
PS-63	residual soil & slope wash	garnet
PS-64	residual soil & slope wash	mineralized garnet
PS-65	slope wash	garnet float
PS-66	residual soil & slope wash	Cottonwood granite
PS-67	residual soil	Uncle Sam granite (?)
PS-68	residual soil,& slope wash	Uncle Sam granite
PS-69	residual soil & slope wash	Uncle sam granite
PS-70	slope wash	Uncle Sam granite
PS-71	residual soil	Uncle Sam granite
PS-72	residual soil & slope wash	Uncle Sam granite
PS-73	residual soil & slope wash	Uncle Sam granite
PS-74	slope wash	Uncle Sam granite
PS-75	slope wash	Uncle Sam granite
PS-76	residual soil	Uncle Sam granite
PS-77	residual soil & slope wash	~~altered~~ skarn
PS-78	residual soil	marble
PS-79	slope wash	Uncle Sam granite
PS-80	residual soil & slope wash	Uncle Sam granite
PS-81	residual soil	Uncle am granite
PS-82	residual soil	Uncle Sam granite
PS-83	residual soil & slope wash	Uncle Sam granite
PS-84	residual soil	garnet
PS-86	slope wash	skarn
PS-87	residual soil	Cottonwood granite; highly altered
PS-88	slope wash	skarn
PS-89	residual soil	garnet(?)
PS-90	slope wash	Uncle Sam granite
PS-91	residual soil	Uncle Sam granite
PS-92	residual soil	Uncle Sam granite
PS-93	residual soil & slope wash	marble
PS-94	residual soil	andesite
PS-95	residual soil & slope wash	andesite

Soil sample no.	Type of soil	Underlying bedrock
PS-99	residual soil	andesite
PS-100	residual soil	andesite
PS-101	residual soil	andesite
PS-102	residual soil	andesite
PS-103	residual soil	andesite
PS-104	residual soil	Cottonwood granite
PS-105	residual soil & slope wash	Cottonwood granite
PS-106	residual soil	altred Cottonwood granite (secondary molybdenum minerals)
PS-107	residual soil	Cottonwood granite
PS-108	residual soil	Cottonwood granite; slightly altered
PS-109	slope wash	Cottonwood granite; slightly altered
PS-110	residual soil	Cottonwood granite
PS-111	residual soil	Cottonwood granite
PS-112	residual soil	Cottonwood granite
PS-113	residual soil	Cottonwood granite
PS-114	residual soil	Cottonwood granite
PS-115	residual soil,	Cottonwood granite; slightly altered
PS-116	residual soil	Cottonwood granite
PS-117	residual soil	Cottonwood granite
PS-118	residual soil	Cottonwood granite
PS-119	residual soil	andesite
PS-120	residual soil	Cottonwood granite; slight sericite alteration
PS-121	residual soil & slope wash	Cottonwood granite; slight sericite alteration
PS-122	residual soil	Cottonwood granite; slightly altered
PS-123	residual soil & slope wash	Cottonwood granite
PS-125	residual soil & slope wash	Cottonwood granite
PS-126	residual soil	Cottonwood granite
PS-127	residual soil	Cottonwood granite
PS-128	residual soil	Cottonwood granite
PS-129	slope wash	andesite
PS-130	residual soil & slope wash	andesite
PS-131	slope wash	andesite
PS-132	slope wash	andesite
PS-133	slope wash	andesite
PS-134	slope wash	andesite
PS-135	slope wash	Cottonwood granite
PS-136	residual soil & slope wash	Cottonwood granite
PS-137	slope wash	andesite
PS-138	residual soil	Cottonwood granite
PS-139	residual soil & slope wash	Cottonwood granite
PS-140	residual soil & slope wash	Cottonwood granite
PS-141	residual soil	Cottonwood granite
PS-142	residual soil	Cottonwood granite
PS-143	residual soil	Cottonwood granite; quartz alteration
PS-144	residual soil,	Cottonwood granite
PS-145	residual soil & slope wash	Cottonwood granite
PS-146	residual soil & slope wash	Cottonwood granite
PS-147	residual soil & slope wash	Cottnwood granite
PS-149	slope wash	Cottonwood granite
PS-150	residual soil	Cottonwood granite
PS-151	slope wash	Cottonwood granite
PS-152	slope wash	Cottonwood granite

Check sample numbers included with soil samples, Cucomungo Spring Arae, Nevada

Check sample number	Sample from which check sample was split
PS-18s	PS-5
PS-40s	PS-27
PS-64s	PS-53
PS-85	PS-183
PS-89s	PS-75
PS-111s	PS-90
PS-124	PS-200
PS-131s	PS-118
PS-148	PS-214
PS-154s	PS-143
PS-177s	PS-166
PS-224s	PS-217
PS-238s	PS-233
PS-263s	PS-251
PS-201s	PS-269
CC-12s	CC-4
CC-21s	CC-16
CC-6s	CC-29
CC-31s	CC-39
CC-40s	CC-48

Soil sample no.	Type of soil	Underlying bedrock
PS-154	slope wash	Cottonwood granite
PS-155	slope wash	Cottonwood granite
PS-156	slope wash	Cottonwood granite
PS-157	slope wash	Cottonwood granite
PS-158	slope wash	Cottonwood granite
PS-159	slope wash	Cottonwood granite
PS-160	residual soil	Cottonwood granite
PS-161	slope wash	Cottonwood granite
PS-162	slope wash	Cottonwood granite
PS-163	residual soil	Cottonwood granite
PS-164	residual soil	Cottonwood granite
PS-165	residual soil	andesite
PS-166	residual soil & slope wash	andesite
PS-167	residual soil & slope wash	andesite
PS-168	residual soil & slope wash	andesite
PS-169	residual soil & slope wash	Skarn
PS-170	residual soil	Cottonwood granite
PS-171	residual soil	Cottonwood granite; quartz alteration
PS-172	residual soil	andesite
PS-173	residual soil	Cottonwood granite
PS-174	residual soil	Cottonwood granite
PS-175	residual soil	intrusives
PS-176	residual soil	intrusives
PS-177	residual soil	diorite
PS-178	residual soil & slope wash	Cottonwood granite
PS-179	slope wash	Cottonwood granite
PS-180	slope wash	Cottonwood granite
PS-181	slope wash	Cottonwood granite
PS-182	residual soil	Cottonwood granite
PS-183	residual soil	andesite
PS-184	residual soil	andesite
PS-185	residual soil	andesite
PS-186	residual soil	Cottonwood granite
PS-187	residual soil & slope wash	Cottonwood granite
PS-188	residual soil	Cottonwood granite
PS-189	residual soil	andesite
PS-190	residual soil & slope wash	andesite
PS-191	residual soil & slope wash	andesite
PS-192	residual soil & slope wash	andesite
PS-193	residual soil & slope wash	andesite
PS-194	residual soil & slope wash	Cottonwood granite
PS-195	residual soil & slope wash	Cottonwood granite
PS-196	slope wash	Uncle Sam granite
PS-197	residual soil	garnet
PS-198	slope wash	andesite
PS-199	slope wash	andesite
PS-200	slope wash	andesite
PS-201	slope wash	Cottonwood granite
PS-202	slope wash	Cottonwood granite
PS-203	slope wash	Cottonwood granite
PS-204	slope wash	Cottonwood granite
PS-205	residual soil	Cottonwood granite
PS-206	residual soil & slope wash	Cottonwood granite
PS-207	slope wash	andesite
PS-208	slope wash	Cottonwood granite

Soil sample no.	Type of soil	Underlying bedrock
PS-211	slope wash	andesite
PS-212	slope wash	andesite
PS-213	slope wash	andesite
PS-214	slope wash	andesite
PS-215	slope wash	andesite
PS-216	residual soil	Cottonwood granite; altered
PS-217	residual soil	Cottonwood granite; altered with secondary molybdenum minerals
PS-218	residual soil	Cottonwood granite; altered with secondary molybdenum minerals
PS-219	residual soil	andesite
PS-220	residual soil	andesite
PS-221	residual soil	andesite
PS-222	residual soil	andesite
PS-223	residual soil	andesite
PS-224	residual soil	andesite
PS-225	residual soil & slope wash	Cottonwood granite
PS-226	residual soil	Cottonwood granite
PS-227	residual soil	Cottonwood granite
PS-228	residual soil	andesite
PS-229	residual soil & slope wash	andesite
PS-230	residual soil	andesite
PS-231	residual soil	andesite
PS-232	residual soil	andesite
PS-233	residual soil	andesite
PS-234	residual soil & slope wash	andesite
PS-235	residual soil	andesite
PS-236	residual soil	andesite
PS-237	residual soil	andesite
PS-238	residual soil	andesite
PS-239	residual soil	andesite
PS-240	residual soil	Uncle Sam granite
PS-241	residual soil	Uncle Sam granite
PS-242	residual soil	Cottonwood granite
PS-243	residual soil	Cottonwood granite
PS-244	residual soil	andesite
PS-245	residual soil	andesite
PS-246	residual soil	andesite
PS-247	residual soil & slope wash	Uncle Sam granite
PS-248	residual soil	Uncle Sam granite
PS-249	residual soil	Uncle Sam granite
PS-250	residual soil	Uncle Sam granite
PS-251	residual soil	Uncle Sam granite
PS-252	residual soil	Uncle Sam granite
PS-253	residual soil	Cottonwood granite
PS-254	residual soil	~~filite~~ phyllite
PS-255	residual soil	~~filite~~ phyllite
PS-256	residual soil	garnet
PS-257	residual soil	andesite
PS-258	residual soil	Cottonwood granite
PS-259	residual soil	andesite
PS-260	residual soil	andesite
PS-261	residual soil	andesite
PS-262	residual soil	andesite
PS-263	residual soil	andesite
PS-264	residual soil	andesite

Soil sample no.	Type of soil	Underlying bedrock
PS-267	residual soil	andesite
PS-268	residual soil	andesite
PS-269	residual soil	andesite
PS-270	residual soil	andesite
PS-271	residual soil	andesite
PS-272	residual soil	andesite

US-1	residual soil	Uncle Sam granite
US-2	resiual soil	Cottonwood granite(?) ← No. probably a felsite dike. R.H.J.
US-3	residual soil	Uncle Sam granite
US-4	residual soil	Uncle Sam granite
US-5	residual soil	Uncle Sam granite
US-6	residual soil	Uncle Sam granite
US-7	residual soil	Uncle Sam granite
US-8	residal soil	Uncle Sam granitte
US-9	residual soil	Uncle Sam granite
US-10	residual soil	Uncle Sam granite
US-11	residual soil	Uncle Sam granite
US-12	residual soil	Uncle Sam granite
US-13	residual soil	Uncle Sam granite
US-14	residual soil	Uncle Sam granite
US-15	residual soil	Uncle Sam granite
US-16	residual soil	Uncle Sam granite

Bedrock sample no.	Rock type
PS-4B	Cottonwood granite
PS-5B	Cottonwood granite
PS-6B	Cottonwood granite
PS-7B	andesite
PS-9B	andesite
PS-11B	Cottonwood granite
PS-12B	Cottonwood granite
PS-13B	Cottonwood granite
PS-14B	Cottonwood granite
PS-15B	Cottonwood granite
PS-16B	Cottonwood granite
PS-17B	Cottonwood granite
PS-18B	Cottonwood granite
PS-19B	Cottonwood granite
PS-21B	andesite
PS-22B	Cottonwood granite
PS-23B	~~filite~~ phyllite
PS-24B	Cottonwood granite
PS-26B	~~filite~~ phyllite
PS-28B	limestone
PS-30B	Cottonwood granite
PS-35B	Cottonwood granite
PS-36B	Cottonwood granite
PS-37B	Cottonwood granite
PS-41B	filite
PS-42B	Cottonwood granite
PS-43B	Cottonwood granite
PS-44B	Cottonwood granite
PS-45B	Cottonwood granite
PS-50B	Cottonwood granite
PS-52B	Cottonwood granite
PS-53B	Cottonwood granite
PS-58B	marble
PS-60B	limestone
PS-62B	limestone
PS-63B	garnet
PS-64B	garnet
PS-66B	Cottonwood granite
PS-67B	Uncle Sam granite(?)
PS-69B	Uncle Sam granite
PS-71B	Uncle Sam granite
PS-72B	Uncle Sam granite
PS-73B	Uncle Sam granite
PS-76B	Uncle Sam granite
PS-77B	skarn
PS-78B	marble
PS-80B	Uncle Sam granite
PS-81B	Uncle Sam granite
PS-82B	Uncle Sam granite
PS-83B	Uncle Sam granite
PS-84B	garnet
PS-85B	copper sample
PS-87B	Cottonwood granite
PS-89B	garnet(?)
PS-91B	Uncle Sam granite
PS-92B	Uncle Sam granite
PS-93B	marble
PS-104B	Cottonwood granite
PS-106B	Cottonwood granite
PS-108B	Cottonwood granite
PS-109B	Cottonwood granite
PS-111B	Cottonwood granite
PS-113B	Cottonwood granite
PS-114B	Cottonwood granite
PS-115B	Cottonwood granite
PS-118B	Cottonwood granite
PS-119B	andesite
PS-120B	Cottonwood granite
PS-122B	Cottonwood granite
PS-126B	Cottonwood granite
PS-128B	Cottonwood granite
PS-117B	Cottonwood granite
PS-121B	Cottonwood granite
PS-134B	Cottonwood granite
PS-136B	Cottonwood granite
PS-138B	Cottonwood granite
PS-143B	Cottonwood granite
PS-144B	Cottonwood granite
PS-160B	Cottonwood granite
PS-163B	Cottonwood granite
PS-164B	Cottonwood granite
PS-165B	andesite
PS-167B	andesite
PS-168B	andesite
PS-170B	Cottonwood granite
PS-171B	Cottonwood granite
PS-182B	Cottonwood granite
PS-183B	andesite
PS-185B	andesite
PS-193B	andesite
PS-196B	Uncle Sam granite(?)
PS-197B	garnet
PS-222B	andesite
PS-235B	andesite
PS-236B	andesite
PS-237B	andesite
PS-239B	andesite

Bedrock sample no.	Rock type
PS-240B	Uncle Sam granite
PS-241B	Uncle Sam granite
PS-242B	Cottonwood granite
PS-248B	Uncle Sam granite
PS-252B	Uncle Sam granite
PS-254B	marble
PS-256B	garnet
PS-257B	andesite
PS-258B	Cottonwood granite
PS-261B	andesite
PS-262B	andesite
~~PS-~~	
US-1B	Uncle Sam granite
US-2B	Cottonwood granite(?) <— No - Probably a felsite dike - KRJ.
US-3B	Uncle Sam granite
US-4B	Uncle Sam granite
US-6B	Uncle Sam granite
US-7B	Uncle Sam granite
US-8B	Uncle Sam granite
US-9B	Uncle Sam granite
US-10B	Uncle Sam granite
US-12B	Uncle Sam granite
US-14B	Uncle Sam granite
US-15B	Uncle Sam granite


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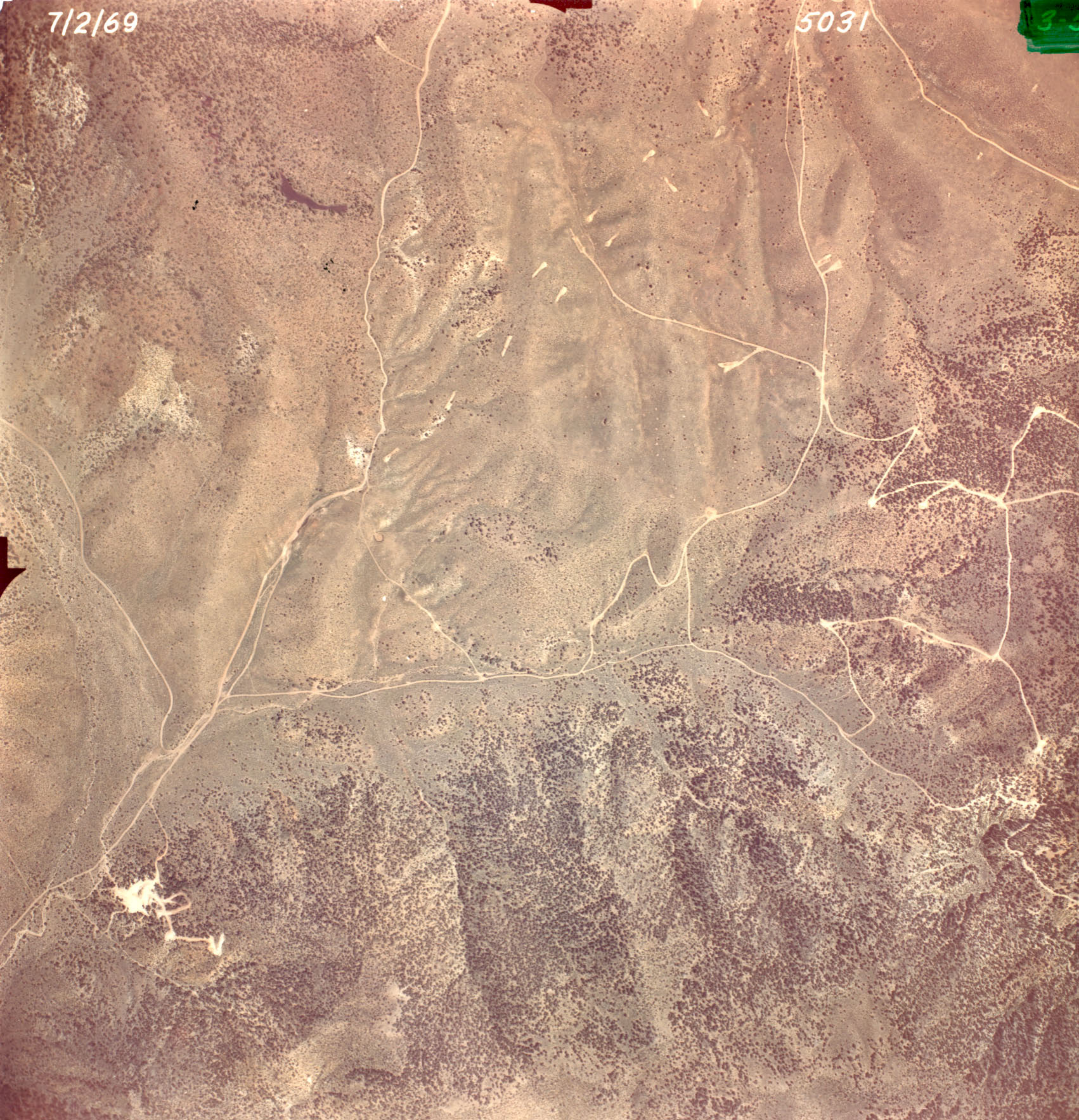
5031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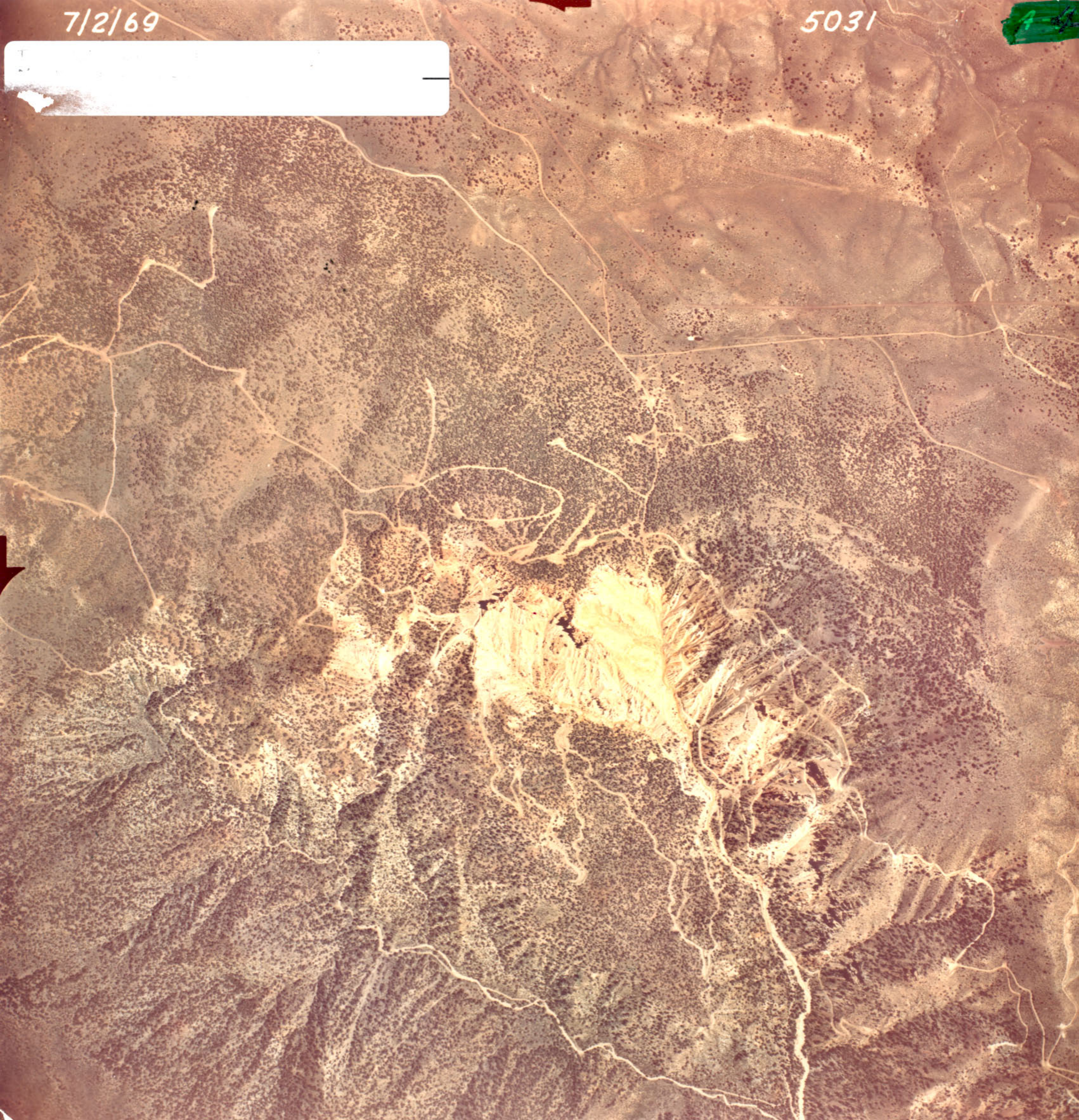
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(103) Item 24

(102)
Item 24

Reno, Nevada
February 5, 1958
File 8-342

HBC, Jr.: <u>Re: Cucamonga Molybdenum Property</u>

The minus 2"-plus 10-mesh rejects (low-grade ore) to be discharged from trommel screens could be conveyed to a HMS plant for purpose of sinking all heavy pieces of MoS_2 ore having a specific gravity above the point of division to be selected after sink and float tests are made. By such an operation we would assure ourselves that no high-grade MoS_2 ore would be sent to low-grade ore dumps. Laboratory tests should be made by Western Machinery Co. at an early date to determine if the HMS process is applicable.

U.S.G.S. Bulletin 770, page 438, defines APLITE as a granitic rock containing quartz and feldspar. It states that J. E. Spurr advocates applying the name ALASKITE to APLITE formations. We will assume that aplite in a barren state has a 2.6 sp. gr. It seems reasonable to suppose that in view of the fact that MoS_2 has a specific gravity of only 4.7, that in order to obtain sufficient variation in specific gravity between particles of ore containing enough MoS_2 and those containing but little MoS_2, the first mentioned particles must contain at least 5% MoS_2 in order to create for HMS purposes a variation of 1/10 of 1 specific gravity. My calculation follows:

1. Particle of ore assaying 1% MoS_2 increases specific gravity of 2.6 host rock to only 2.621.

1% x 4.7 =	.047
99% x 2.6 =	2.574
Sp. Gr.	2.621

2. Particle of ore assaying 2% MoS_2 increases specific gravity of 2.6 host rock to only 2.642.

2% x 4.7 =	.094
98% x 2.6 =	2.548
Sp. Gr.	2.642

3. Particle of ore assaying 3% MoS_2 increases specific gravity of 2.6 host rock to only 2.663.

3% x 4.7 =	.141
97% x 2.6 =	2.522
Sp. Gr.	2.663

4. Particle of ore assaying 4% MoS_2 increases specific gravity of 2.6 host rock to only 2.684.

$$\begin{aligned} 4\% \times 4.7 &= .188 \\ 96\% \times 2.6 &= \underline{2.496} \\ \text{Sp.Gr.} & \quad 2.684 \end{aligned}$$

5. Particle of ore assaying 5% MoS_2 increases specific gravity of 2.6 host rock to only 2.705.

$$\begin{aligned} 5\% \times 4.7 &= .235 \\ 95\% \times 2.6 &= \underline{2.470} \\ \text{Sp.Gr.} & \quad 2.705 \end{aligned}$$

There is a possibility that the MoS_2 occurs in particles of ore more abundantly with marcasite, and that the marcasite may occur in quantities of two times or more greater than the MoS_2. If so, then the combined specific gravity of both 3% marcasite (sp.gr. of 4.8) and 2% MoS_2 would create a specific gravity for the host rock (aplite) containing both marcasite and MoS_2 which would be at least 1/10 of 1 sp. gr. greater than the barren or low-grade aplite. It seems reasonable to suppose that a host rock (aplite) assaying 2% or more MoS_2 and 3% or more marcasite, would sink in a HMS plant if operated efficiently to obtain a separation at 1/10 of 1 sp. gr. variation.

I have no idea as regards the difficulties to be encountered in operating a HMS plant where the sink and float separation is to be made upon particles of ore (minus 2" and plus 10--mesh) having a variation in specific gravity of only 1/10 of 1. We, of course, must be guided by the advice of Otto Brown and Jack Hill.

HBC

HBC/emk

Reno, Nevada
File 8-344
February 5, 1958

HBC, Jr.:

Please read carefully the third paragraph on page 4 of Edward W. Brooks' original report. Note that he states that the Molybdenite is definitely not disseminated through the body of the porphyry, but always occurs in and along the margins of quartz veinlets, stringers or seams.

Our problem is to determine if a substantial percentage of the Molybdenite will drop out of the Vugh holes, veinlets, stringers and seams when the crude ore is crushed to minus 2". Also, we must determine if the Molybdenite, after it is released, will pass through a 10--mesh screen.

If we could mine 1400 tons of 0.50% MoS_2 and crush it to minus 2" and thereby be able to screen out in a bath of water in a trommel 10-mesh screen, a total of 400 tons of minus 10-mesh assaying 1.00% MoS_2, we would then send 1000 tons of rejected low-grade ore assaying 0.30% MoS_2 to low-grade or reject dump. The 400 tons of minus 10-mesh ore assaying 1.00% MoS_2 would represent our entire mill feed for each day's operation.

Please assume that screening 7 tons of 0.50% MoS_2 minus 2" ore through a 10-mesh trommel screen will produce 2 tons of minus 10-mesh Moly ore assaying 1.00% MoS_2. The calculation and estimated profit follows:

1. Mine each day 1400 tons 0.50% MoS_2 ore and crush to 2". Send the minus 2" to a trommel screen with 10--mesh croppings. Screen in water bath in trommel the 1400 tons of minus 2" ore and screen out 400 tons of minus 10-mesh ore containing 1.00 MoS_2, and send to low-grade dump 1000 tons of plus 10-mesh rejects assaying 0.30% MoS_2.

2. Send the 400 tons of minus 10-mesh 1.00% MoS_2 ore to flotation plant where the 400 tons of minus 10-mesh ore is classified, ground and the Molybdenite concentrated by flotation.

3. The original flotation concentrate will necessarily have to be cleaned up to make a 95% MoS_2 product. I presume the concentrates are reground and submitted to a second stage of concentration by flotation.

4. The per diem recovery, and operating costs, by the method aforesaid, follows:

RECOVERY PER DIEM

400 tons x 1.00 MoS_2 (20 lbs.)
@ 70.8¢ per lb. of MoS_2 x 90% = $5097.00

OPERATING COSTS PER DIEM

1400	tons mining	25¢	$ 350.00
1400	tons trucking	25¢	350.00
1400	tons crushing	25¢	350.00
1400	tons screen & disposal	25¢	350.00
1400	tons O/H & miscel.	25¢	350.00
400	tons O/H & miscel.	50¢	200.00
400	tons transporting	25¢	100.00
400	tons jigging	25¢	100.00
400	tons grinding	50¢	200.00
400	tons floating	50¢	200.00
400	tons cleaning	50¢	200.00
400	tons marketing	$1.00	400.00

Total Operating Costs $3150.00

Operating Profit Per Diem $1947.00

The calculation aforesaid appears to me to be more in line with what could be expected, than my letter of February 4, 1958, file No. 332. Our ratio of low-grade to ore would be 3½ to 1, and our total overall operating cost for the 400 tons of ore to be milled will be ($3150 ÷ 400) $7.875 per ton before depreciation, depletion and taxes.

The question presented is whether we can make a 90% recovery in a concentrate assaying 95% MoS_2, and, also, if we can sell the Molybdenite at 70.8¢ per lb.

Please study carefully and determine if I have overlooked any cost which should be included.

HBC

HBC/emk

Reno, Nevada
February 4, 1958
File 8-332

HBC, Jr.:

Please assume a hypothetical operation at the Sorensen Molybdenum property as follows, to-wit:

1. That the Mammoth Springs' water can be obtained and piped to flow by gravity to the rim, near Sorensen cabin, and above the ore zone.

2. That one ton of the Molybdenum ore can be upgraded in a crushing and trommel screening plant (situated near open pit) to contain 1.50% MoS_2 on a 7 to 1 ratio by crushing 7 tons of 0.4% MoS_2 ore to pass through 2" screens and then by screening 7 tons of minus 2" product through ten-mesh trommel screens in a bath of water in order to obtain 1 ton of minus 10-mesh ore assaying 1.50% MoS_2.

3. That the minus 2" plus 10-mesh product from the trommel screens would be dumped on hillside as waste. Each ton of this waste would contain approximately 0.22% MoS_2 if we obtained 1 ton of minus 10-mesh ore assaying 1.50% MoS_2 from each 7 tons of minus 2" ore put through the trommel screens.

4. That the minus 10-mesh product from the 10-mesh trommel screens would flow in pipe-line, at a rapid descent, to a 300 ton jig plant mill constructed at an advantageous position on hillside down Alum Gulch. The 300 ton flotation plant would be below the jig plant.

5. That the pipe-line transporting the minus 10-mesh 1.50% MoS_2 ore would discharge the ore to jig plant for purpose of removing all large free particles of metallics; including the free MoS_2, by jigging.

6. That the tailings from the jig plant should be separated into two products as follows: a finely-ground

product suitable for feed to our flotation plant, and the rejected coarse product (all minus 10-mesh) to be sent to grinding mills for reduction to proper size for additional feed to our flotation plant. The jig concentrates probably will have to be reground and the MoS_2 concentrated by flotation in order to make a 90% MoS_2 concentrate.

7. That a rough estimate reveals the gross receipts and estimating operating costs from aforesaid plan will produce an operating profit of $2400.00 per diem, calculated as follows:

OPERATING COSTS PER DIEM

2100 tons mining	25¢	per ton	$ 525.00
2100 tons trucking	25¢	" "	525.00
2100 tons crushing	25¢	" "	525.00
2100 tons screening	25¢	" "	525.00
300 tons piping to mill	10¢	" "	30.00
300 tons jigging	10¢	" "	30.00
300 tons floating	50¢	" "	150.00
300 tons grinding	50¢	" "	150.00
2100 tons overhead & misc.	25¢	" "	525.00
300 tons overhead & misc.	50¢	" "	150.00
		Total	$3135.00

GROSS INCOME PER DIEM

300 tons x 30 lbs. (1.5%) MoS_2 x 70.8¢ per lb. x 90% recovery	$5535.00
*Gross Profit Per Diem	$2400.00

8. That the two weak or unknown factors or questions to be encountered in the adoption of the above hypothetical flow sheet, are as follows:

(a) Is it possible to crush 7 tons of the ore to minus 2" and thereby be able to limit the fines to be screened through a minus 10--mesh trommel screen, to only 1 ton of ore? (We might get

*Does not include royalty, taxes, depletion and depreciation.

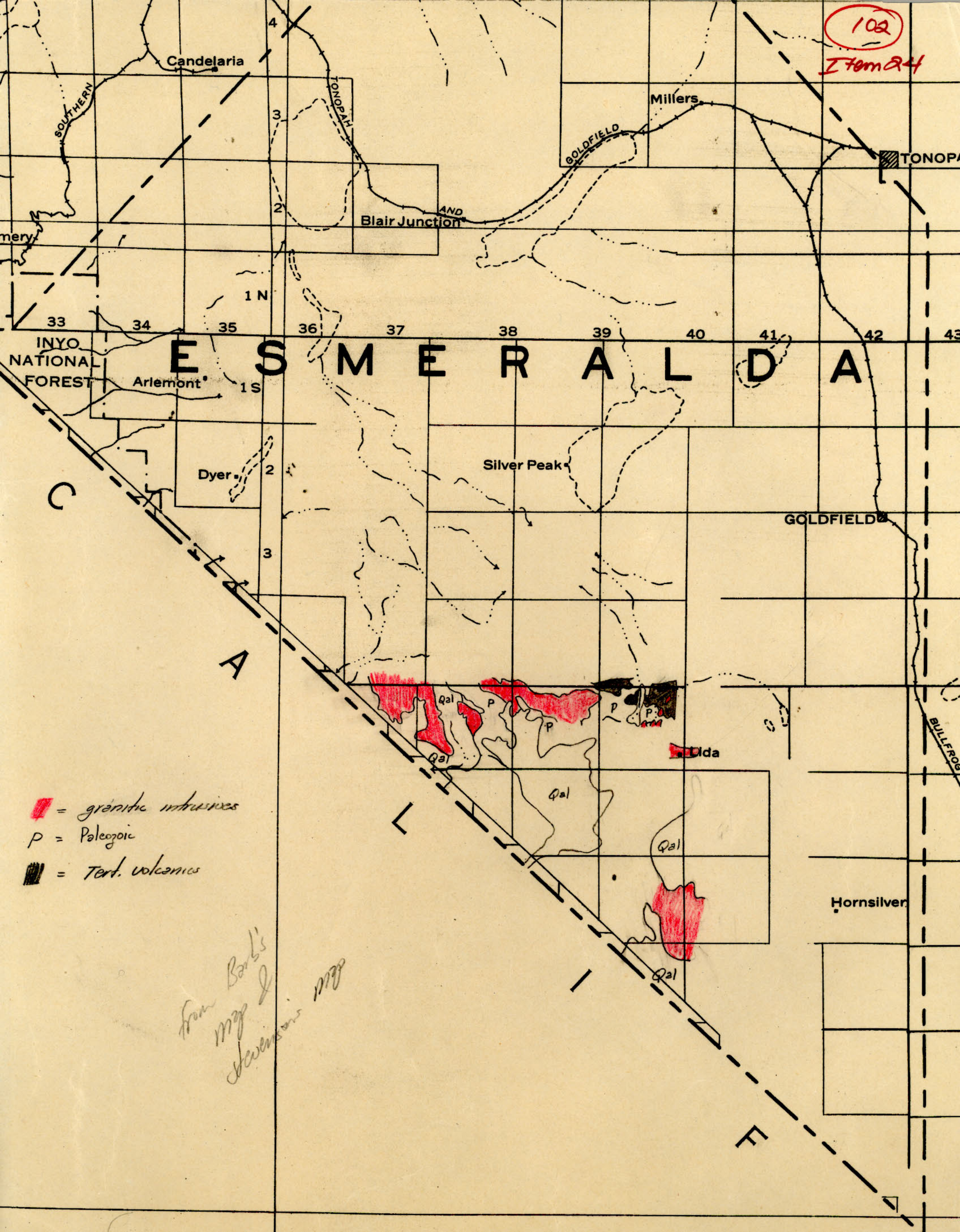
2 tons - which would lower the grade of our minus 10-mesh product).

(b) Is it possible to flow by gravity the minus 10-mesh screened product from screening plant to mill? (If not, we might have to use a Wilfley sand pump as a booster.)

Please study and check my estimates and hypothetical flow sheet. I am sure that you will be able to improve thereon.

HBC

HBC/emk



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Item 24
Candelaria
SOUTHERN
TONOPAH
Millers
GOLDFIELD
AND
Blair Junction
TONOPA
4
3
2
1 N
33
34
35
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40
41
42
43
INYO
NATIONAL
FOREST
ESMERALDA
Arlemont
1 S
Dyer
2
3
Silver Peak
GOLDFIELD
C A L I F
Qal
P
Lida
BULLFROG
Hornsilver
= granitic intrusives
P = Paleozoic
= Tert. volcanics
from Bart's map & Stevenson's map

vol XIII p 101 — 645 Tunnel at Illium gulch - last 200' in
12/22/37 — ore of good grade.

vol XIV p 74. — Prop. of Nevada Moly Co. in Illium Gulch sold
4/3/38 — at sheriffs sale to satisfy $1678 judgement.

vol XV p 144 — Freeport Sulphur takes option on Roper &
8/16/39 — Sorenson groups of molybdenum claims.
Eng. examined mine; plan to diamond drill

vol XV p 174 — Freeport Sulphur drilling & mapping Roper &
12/15/39 — Sorenson molybdenum claims.

News File

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Item 24

INTERVIEW WITH ROPER REGARDING SORENSEN MOLYBDENUM PROPERTY

H. B. Chessher and Bob Sorensen drove to the Sierra Talc Mine – between Coaldale and Lida, to confer with Roper, the man who drove most of the Lower Tunnel at Sorensen's Moly Mine. Roper reports as follows:

1. That Brooks' report was wrong. The tunnel was advanced to only about 200' when the work was closed down in 1957. That when Freeport took over, the work in said tunnel commenced at around 200' in from portal, which was where Brooks et al ceased work. That at about 300' Freeport was in the 0.50% MoS_2 ore: being a ledge 50' wide crossing the tunnel at right angles. Brooks et al had hit the edge (wall) of the 50' ore zone when their work ceased; however, they were kept ignorant of the ore because they had not paid Roper and the miners.
2. That Freeport advanced the tunnel to in excess of 800'. Roper thought it was 840' in from portal. Freeport drifted east on the 50' ledge encountered at around 300' in from portal, and at the end of the first 100' easterly drift they crosscut to both walls. Mineralized zone (ore) was 50' wide. That every foot of the tunnel had to be timbered because the ground was damp and heavy. That at times the sets were put in against the face before drilling next round, and on two or three occasions they had to spile ahead.
3. That the 50' ledge averaged slightly better than 0.50% MoS_2. That the yellow hill (oxidized ore) will average only 0.22% MoS_2. That he drove a 90' drift tunnel in

the ore body in the big cropping. He stationed the compressor on rim, where Sorensen's cabin is located, and then strung the air line (pipe) down=hill to the drift tunnel portal. That the ore from the drift tunnel also averaged around 0.50% MoS_2. That Freeport found no ore in lower tunnel as good or better as in the 50' ledge (0.50% MoS_2) which they cross-cut at 300' in from portal. That the 90' tunnel stood up without timbers. That he believes a tunnel driven in the yellow cropping halfway between the rim and portal of lower (340') tunnel, can be driven without timbering. That he is not interested in taking a tunnel contract. That the ore occurs in the aplite. That everyone, except Brooks, thought the lower 340' tunnel had been spotted and driven in the wrong place.

4. That Freeport would take about 1,000 lbs. from the muck from each round, and would crush sample down to around ¾" and then quarter sample down to what was necessary to be sent to the assayers. That Freeport had an engineer in charge of sampling, crushing, quartering and making up all samples for assayers. That Freeport had such variations in MoS_2 determinations among the assayers to whom their samples were submitted, Freeport's Chief Chemist came out from Louisiana and put in an assay office at Goldfield, where their own assayer thereafter assayed the samples.

5. That Freeport spent over $10,000.00 in obtaining a water permit on Mammoth Springs, which is the source of water that supplied Goldfield during the height of its boom (1906-10). That the water line had been abandoned by

Goldfield when Freeport acquired the water permit on Mammoth Springs, the source of a lot of water.

6. That REA is negotiating with Fish Lake power consumers for a line into Fish Lake Valley. That he thinks the line could be extended by REA to the Moly property if proper negotiations are made before plan is complete. That he had attended a meeting only a few days past when Fish Lake residents met with REA representatives.

7. That he does not think much of the management displayed by Brooks and Nibley. That the only possible commercial ore opened in 340' tunnel was the 50' ledge assaying 0.50% MoS_2. That he thinks the ore zone is around 500' to 1,000' wide where the big yellow cropping is exposed, on surface, and he believes it will average around 0.50% MoS_2. He says the ore zone is only 50' wide where the lower tunnel crosscuts the ore zone. The tunnel is too far to the South-East.

SYLVANIA mine 122 Esmeralda County, Nevada, USA

Other names:
Location: West-central Sec. 23, T. 6 S., R. 38 E.
Molybdenum production: None.
Development: Underground workings made while mining lead-silver ore.
Geology: MOLYBDENITE reportedly occurs with galena in veins in limestone near an intrusive body of granite.

****

** New occurrence; not described in Rpt. 2.

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100+

E-Z SORT SYSTEMS - STANDARD No. 3810 D E-Z SORT SYSTEMS, LTD., SAN FRANCISCO 5, CALIF. U.S. PATENTS NOS. 2.198.127 - 2.339.519 - 2.424.053 - 2.490.156 - 2.515.424 - 2.531.786 PLUS CANADIAN & PATS. PEND.

100+

Item 24

SISKON CORPORATION P. O. BOX 889 RENO, NEVADA 895

640 NORTH SIERRA STREET
RENO, NEVADA 89503

TELEPHONE 323-5
AREA CODE:

PROGRESS REPORT OF THE PRESIDENT

To the STOCKHOLDERS of SISKON CORPORATION:

Due to my ill health, I came to the conclusion that the management of Siskon should be held by a group who would be more able to raise sufficient capital for carrying out the exploration and development work so essential to the creating of a successful mining corporation. Therefore, when Apco Oil Corporation of Oklahoma City, Oklahoma, and Robert E. Holt, of Tucson, Arizona, agreed to purchase approximately 71% of the issued and outstanding capital stock of Siskon Corporation, the agreement was accepted and, as of November 26, 1968, the Chesshers sold control of Siskon Corporation to Apco Oil Corporation and Robert E. Holt. Although a new Board of Directors was seated on January 14, 1969, said Board of Directors requested H. B. Chessher, Sr. to continue to serve as President, H. B. Chessher, Jr. to continue to serve as Vice-President and General Superintendent; and (Mrs.) A. L. Chadek to serve as Secretary-Treasurer and Office Manager until their successors are elected.

It is possible that the demand for the shares of Siskon Corporation which are listed on the National Stock Exchange, 91 Hudson Street, New York, N. Y. 10013, might indicate that the public appraises the above described transaction as an advantageous move for Siskon stockholders. Siskon shares, as recorded on the National Stock Exchange records, evidence a low of $1.50 to a high of $5.75 during the year 1968.

In order that Siskon's stockholders might have some knowledge regarding Apco Oil Corporation, your President has obtained information as follows:

> Apco's corporate headquarters is located in Oklahoma City, Oklahoma. They have a total of approximately 1,000 employees. It is a publicly owned company with its stock traded on the New York Stock Exchange.
>
> Apco has two refineries and owns three subsidiary pipeline companies, two crude gathering systems and one products pipeline. It markets gasoline in twelve states through more than 1,700 stations and also markets solvents and asphalts.
>
> Apco presently owns producing properties in Canada and in the United States; and has entered into exploration and producing activities in Argentina. It is also active in the Republic of Colombia, South America; in Western Canada; and in Alaska.
>
> On August 2, 1968, Apco announced the formation of a Minerals Division with its Petroleum and Minerals Department. This new Division is actively pursuing Apco's interests in hard rock mining and minerals. It was through these efforts that the Officials of Apco Oil Corporation recognized the merits of Siskon. They plan continued evaluation and development of Siskon's properties and an active search for additional properties.

It is truly hoped that all plans currently being formulated by Apco and Holt for the continuation of the affairs of Siskon Corporation will be announced and successfully carried out by the new owners of control of Siskon Corporation.

Respectfully submitted,

H. B. Chessher, Sr.

Dated: April 15, 1969

H. B. Chessher, ~~Sr.~~, President

LEROY H. CHANSLOR, C.P.A.
ALFRED BARBIERI, C.P.A.
W. ELMO DEWHITT, C.P.A.
RICHARD R. KEARNEY, C.P.A.
DONALD A. PRINGLE, C.P.A.

CHANSLOR, BARBIERI & DEWHITT
CERTIFIED PUBLIC ACCOUNTANTS
1 EAST FIRST STREET, SUITE 904
RENO, NEVADA 89504
TELEPHONE 322-3467

MEMBERS
AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS
NEVADA SOCIETY OF CERTIFIED PUBLIC ACCOUNTANTS

BOARD OF DIRECTORS
SISKON CORPORATION
RENO, NEVADA

WE HAVE EXAMINED THE BALANCE SHEET OF SISKON CORPORATION AS OF DECEMBER 31, 1968, AND THE RELATED STATEMENTS OF INCOME AND EXPENSE AND RETAINED EARNINGS FOR THE YEAR THEN ENDED. OUR EXAMINATION WAS MADE IN ACCORDANCE WITH GENERALLY ACCEPTED AUDITING STANDARDS AND ACCORDINGLY INCLUDED SUCH TESTS OF THE ACCOUNTING RECORDS AND SUCH OTHER AUDITING PROCEDURES AS WE CONSIDERED NECESSARY IN THE CIRCUMSTANCES.

IN OUR OPINION, SUBJECT TO THE SUCCESSFUL DEVELOPMENT OF MINING CLAIMS AND LEASES AND PROPERTIES OF AFFILIATED COMPANIES IN THE AMOUNTS OF $492,551.48 AND $289,865.61 RESPECTIVELY, THE ACCOMPANYING BALANCE SHEET, STATEMENT OF INCOME AND STATEMENT OF RETAINED EARNINGS, PRESENT FAIRLY THE FINANCIAL POSITION OF SISKON CORPORATION AT DECEMBER 31, 1968, AND THE RESULTS OF ITS OPERATIONS FOR THE YEAR THEN ENDED, IN CONFORMITY WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPLES APPLIED ON A BASIS CONSISTENT WITH THAT OF THE PRECEDING YEAR.

CHANSLOR, BARBIERI & DEWHITT

Chanslor, Barbieri & DeWhitt
CERTIFIED PUBLIC ACCOUNTANTS

RENO, NEVADA
FEBRUARY 18, 1969

EXH

SISKON CORPORATION
BALANCE SHEET

ASSETS	DECEMBER 31, 1968	196
CURRENT ASSETS		
CASH IN BANK	$ 77,570.43	$ 31,
TIME DEPOSITS	- -	5,
U. S. GOVERNMENT SECURITIES AT COST (MARKET VALUE $185,391.52)	181,852.04	160,
MARKETABLE SECURITIES AT COST	- -	13,
NOTES AND ACCOUNTS RECEIVABLE NET OF ALLOWANCE FOR DOUBTFUL ACCOUNTS	30,657.57	30,
DUE UNDER LEASE/OPTION - NOTE 1	100,000.00	100,
GOLD (FREE) AND GEMS	17,145.89	18,
REFUND CLAIM - PRIOR YEAR'S INCOME TAXES	12,700.91	-
PREPAID EXPENSES AND SUPPLIES	8,339.28	6,
	428,266.12	366,
SECURITIES OF AFFILIATES - NOTE 2		
ATOMIC INDUSTRIES, INC.	2,383.69	2,
CENTRAL COMSTOCK MINES CORPORATION	59,882.60	53,
NEVADA KING COPPER COMPANY	34,340.21	33,
ST. FRANCIS REAL ESTATE COMPANY	58,313.48	58,
TRANS-AMERICA OIL COMPANY	134,945.63	134,
	289,865.61	282,
OTHER ASSETS		
AMOUNT UNDER LEASE/OPTION NOT CURRENTLY DUE UNDER SALE OLD RELIABLE MINE - NOTE 1	200,000.00	300,
FIXED ASSETS		
SISKON MILL AND MACHINERY	350,473.68	350,
MACHINERY, EQUIPMENT AND TRUCKS	119,060.97	224,
	469,534.65	575,
LESS: ACCUMULATED DEPRECIATION	428,138.08	525,
BOOK VALUE	41,396.57	49,
MINING CLAIMS, LEASES AND INVESTMENTS FOR DETAILS SEE SCHEDULE 1	492,551.48	468,
	$1,452,079.78	$1,466,

SISKON CORPORATION
NOTES TO THE BALANCE SHEET
DECEMBER 31, 1968

NOTE 1
UNDER THE TERMS OF AN OPTION AGREEMENT AND ADMENDMENTS THERETO, SISKON CORPORATION GRANTED TO NEWMONT EXPLORATION LIMITED AND MAGMA COPPER COMPANY, THE RIGHT TO LEASE OR PURCHASE PROPERTY IN PINAL COUNTY, ARIZONA. THE TOTAL CONSIDERATION UNDER THE LEASE-OPTION AGREEMENT IS $500,000.00 PLUS A PERPETUAL ROYALTY ON PRODUCTION. THESE COMPANIES HAVE PAID TO SISKON $200,000.00 AND AMENDED THE CONTRACTS SO THEY NOW HAVE POSSESSION. FURTHER, THEY HAVE CARRIED ON AN EXTENSIVE EXPLORATION PROGRAM, DRILLING AT LEAST 15 DEEP HOLES (3000') AT AN ESTIMATED COST OF $25,000.00 TO $35,000.00 PER HOLE.

NOTE 2
IN PAST YEARS SISKON CORPORATION HAS ACQUIRED FIFTY-ONE PERCENT OR MORE OF THE OUTSTANDING CAPITAL STOCK OF THOSE CORPORATIONS SHOWN UNDER THE CAPITON "SECURITIES OF AFFILIATES". THESE COMPANIES HAVE BEEN INACTIVE AND NON-OPERATING AND HAVE BEEN ACQUIRED TO CONTROL THE PROPERTIES WHICH THEY OWNED. WITH THE EXCEPTION OF TRANS-AMERICA OIL COMPANY, THE COSTS INCURRED BY THESE COMPANIES SUCH AS PROPERTY TAXES, HAVE BEEN PAID BY SISKON CORPORATION WHICH HAS CAPITALIZED THESE AMOUNTS. TRANS-AMERICA OIL COMPANY EXPENSES HAVE BEEN PAID FROM THEIR OWN FUNDS, WHICH EXPENSES ARE CURRENTLY LIMITED IN NUMBER AND NONE MATERIAL IN AMOUNT; THE TOTAL OF THESE AMOUNTS IS LESS THAN $5,000.00.

NOTE 3
IN JANUARY OF 1967, SISKON CORPORATION AND ITS WHOLLY OWNED SUBSIDIARY, ST.FRANCIS REAL ESTATE COMPANY ENTERED INTO AN AGREEMENT WHEREIN THEY AGREED TO SELL FOR $700,000.00, INTEREST IN A NOTE SECURED BY A DEED OF TRUST. THIS AGREEMENT SUPPLEMENTED AN OPTION PREVIOUSLY GRANTED ON WHICH A CONSIDERATION OF $100,000.00 WAS PAID. THOSE INDEBTED UNDER THE NOTE HAVE INSTITUTED LEGAL PROCEEDINGS WHICH HAVE DELAYED FORECLOSURE PROCEEDINGS AND HAVE HAD THE EFFECT OF RE-INSTATING THE OPTION AGREEMENT.

NOTE 4
ON MAY 8, 1968, THE CORPORATION ENTERED INTO AN AGREEMENT TO SELL MINING PROPERTY KNOWN AS YOGO SAPPHIRE MINE LOCATED IN JUDITH BASIN COUNTY, MONTANA, FOR A CONSIDERATION OF $580,000.00. AN ESCROW HAS BEEN OPENED AND PAYMENTS IN THE AMOUNT OF $30,000.00 HAVE BEEN RECEIVED BY SISKON, WITH THE REMAINING BALANCE OF $550,000.00 BECOMING DUE JULY 15, 1969. THE BALANCE OF $550,000.00 IS TO BE PAID $300,000.00 IN CASH AND $250,000.00 IN NOTES SECURED BY A FIRST MORTGAGE ON THE PROPERTY.

NOTE 5
THE ZACA MINE GROUP OF CLAIMS, SITUATED IN MONITOR MINING DISTRICT, ALPINE COUNTY, CALIFORNIA, HAS BEEN OPTIONED FOR A CONSIDERATION OF $5,000,000.00 PAYABLE ON OR BEFORE 10 YEARS FROM DECEMBER 21, 1967. THE OPTIONEE IS TO PAY SISKON A MINIMUM ROYALTY OF $1,000.00 PER MONTH BEGINNING JANUARY 1, 1968 AND FURTHER PROVIDING THE OPTIONEE PAYS SISKON $100,000.00 ON OR BEFORE DECEMBER 21, 1970. DURING 1968, THE AMOUNT OF $13,286.71 WAS PAID BY THE OPTIONEE, THE AMOUNT BEING SHOWN AS ROYALTIES RECEIVED BY SISKON CORPORATION. THIS PROPERTY IS CARRIED ON SISKON'S BOOKS AT ONE DOLLAR ($1.00).

NOTE 6
UNDER AGREEMENT DATED FEBRUARY 10, 1968, SISKON CONVEYED TO A LARGE CORPORATION 76 UNPATENTED MINING CLAIMS SITUATED IN THE BATTLE MOUNTAIN MINING DISTRICT. UNDER TERMS OF THE AGREEMENT, THE FIRST PAYMENT OF $15,000.00 WAS DUE FEBRUARY 10, 1969. SISKON CORPORATION WAS ADVISED DURING THIS MONTH THAT THIS SALE WOULD NOT BE CONSUMATED AND THE PROPERTY WAS RECONVEYED TO THE COMPANY.

SCHED

SISKON CORPORATION
SCHEDULE OF MINING CLAIMS, LEASES AND INVESTMENTS

	DECEMBER 31, 1968	19
LEASE ON SISKON GROUP OF CLAIMS IN SISKIYOU COUNTY, CALIFORNIA CURRENTLY INACTIVE, SHOWN AT AMOUNT OF ADVANCE ROYALTIES PAID.	$ 23,870.57	$ 20,8
GRAY EAGLE MINING CLAIMS LOCATED IN SISKIYOU COUNTY, CAL FORNIA SHOWN AT COST PLUS COST OF CARETAKING AND ASSESSMENT WORK	33,455.42	33,4
BALANCE OF OLD RELIABLE MINE COSTS CHARGED TO OLD RELIABLE ORE ZONE ABOVE 500' LEVEL.	63,629.71	61,5
YOGO SAPPHIRE MINE, LOCATED IN JUDITH BASIS, MONTANA. COSTS OF PROPERTY INCLUDES ALL EXPENDITURES UNDER AGREEMENT WITH NEW MINE SAPPHIRE SYNDICATE AND COSTS OF LITIGATION. A CONTRACT OF SALE HAS BEEN SIGNED FOR THIS PROPERTY. SEE NOTE 4.	158,022.85	164,4
COSTS OF OIL WELL INTERESTS AND RIGHTS IN PROPERTY LOCATED IN NEVADA AND CALIFORNIA.	20,488.40	33,2
PATENTED AND UNPATENTED MINING CLAIMS KNOWN AS AURORA MINE, LOCATED NEAR HAWTHORNE, NEVADA. PROPERTY SOLD AND REPOSSESSED AND SHOWN AT VALUE ESTABLISHED BY INDEPENDENT APPRAISAL, PLUS COSTS SINCE REPOSSESSION.	26,022.80	25,0
COST OF TILT-DOWN PATENT ISSUED BY U.S. PATENT OFFICE AND COSTS OF ADVANCE ROYALTIES PAID.	19,595.23	10,5
UNRECOVERED COSTS OF VARIOUS MINING PROPERTIES AND LEASES - APPROXIMATELY 22 IN NUMBER. NOTES 5 AND 6.	147,466.50	119,0
	$492,551.48	$468,2

NOTE 7
REFUND OF INCOME TAXES PAID BY THE INTERNAL REVENUE SERVICE ARISING FROM A 1967 OPERATING LOSS CARRIED BACK TO 1965 TAXABLE INCOME.

NOTE 8
THE REDUCTION OF $12,500.00 IN THE PROVISION FOR FEDERAL INCOME TAXES ARIS FROM A RECOMPUTATION OF THE AMOUNT OF INCOME TAX DUE ON THE SALE OF OLD RELIABL MINE AS REPORTED IN 1967. THIS SALE, FOR INCOME TAX PURPOSES, WAS REPORTED ON THE INSTALLMENT BASIS, WHEREAS THE FULL PROFIT WAS REPORTED IN THE FINANCIAL STATEMENTS. THERE IS NO INCOME TAX LIABILITY FOR THAT PORTION OF SALES PRICE COLLECTED IN 1968.

SISKON CORPORATION
BALANCE SHEET

LIABILITIES	DECEMBER 31, 1968	DECEMBER 31, 1967
CURRENT LIABILITIES		
Accounts payable	$ 13,448.13	$ 971.94
Accrued taxes	1,989.94	1,511.76
Commissions payable	20,000.00	22,500.00
Provision for Federal income taxes - Note 8	60,000.00	72,500.00
	95,438.07	97,483.70
OTHER LIABILITIES		
Due affiliated company - Note 3	100,000.00	100,000.00
Purchase deposit less commission paid on sale of Yogo Sapphire Mine - Note 4	24,000.00	- -
	124,000.00	100,000.00
CAPITAL SHARES AND SURPLUS		
Issued - 4,727,960 shares	472,796.00	472,796.00
Capital surplus - Exhibit C	874,101.14	874,101.14
Earned surplus - Exhibit D	128,812.53	167,134.59
	1,475,709.67	1,514,031.73
Less: Cost of treasury stock - 891,491 shares	243,067.96	245,002.96
	1,232,641.71	1,269,028.77
	$1,452,079.78	$1,466,512.47

EXHIBIT C

SISKON CORPORATION
STATEMENT OF CAPITAL SURPLUS

	1968	1967
Balance - January 1	$874,101.14	$874,101.14
No changes during the year	- -	- -
Balance - December 31	$874,101.14	$874,101.14

EXHIBIT D

SISKON CORPORATION
STATEMENT OF EARNED SURPLUS

	1968	1967
Balance - January 1	$167,134.59	$ 32,848.27
Add: Net income or (Loss) - Exhibit B	(62,800.34)	127,659.92
Refund prior years income taxes - Note 7	11,978.28	6,626.40
Reduction in provision for income taxes arising from 1967 sale - Note 8	12,500.00	- -
Balance - December 31	$128,812.53	$167,134.59

EXHIBIT B

SISKON CORPORATION
STATEMENT OF INCOME

	YEAR ENDED DECEMBER 31, 1968	YEAR ENDED DECEMBER 31, 1967
OPERATING REVENUE		
Royalties received	$ 14,786.71	$ 5,515.54
Miscellaneous sales	21,766.40	3,105.00
	36,553.11	8,620.54
OPERATING EXPENSES		
Maintenance and stand-by costs - Siskon Mine	5,762.99	7,002.27
Depreciation	5,792.39	9,815.26
Investigation of properties	2,366.04	5,154.90
Repairs and maintenance	4,498.55	4,140.85
Cost of properties abandoned	16,139.10	17,366.68
Taxes and insurance	8,044.28	9,431.46
Miscellaneous expenses	1,091.53	1,115.71
	43,694.88	54,027.13
	(7,141.77)	(45,406.59)
ADMINISTRATION EXPENSE		
Salaries and wages	51,035.48	61,641.96
Office expense	20,274.49	17,345.72
Legal	10,120.39	5,253.86
Other professional services	2,557.06	1,965.00
Travel	7,771.29	10,051.44
Advertising and promotion	3,337.74	1,100.40
	95,096.45	97,358.38
	(102,238.22)	(142,764.97)
OTHER INCOME		
Interest earned	13,203.72	9,870.38
Gains from sales of capital assets	34,191.83	12,856.22
Miscellaneous income	2,332.26	318.29
	49,727.81	23,044.89
	(52,510.41)	(119,720.08)
INCOME DEDUCTIONS		
Provision for doubtful accounts	10,289.93	23,500.00
Loss on operations	(62,800.34)	(143,220.08)
SPECIAL ITEMS		
Gain from sale of properties	- -	343,380.00
Less: Federal income taxes	- -	72,500.00
	- -	270,880.00
Net income or loss	$(62,800.34)	$127,659.92

SISKON CORPORATION P. O. BOX 889 RENO, NEVADA

640 NORTH SIERRA STREET
RENO, NEVADA 89503

TELEPHONE
AREA C

SISKON'S PROPERTIES as of MARCH 1st, 1969

Following is the name and location of some of the properties owned, held under option or controlled by Siskon, described by name and location by County and State as follows, towit:

ARIZONA

Old Reliable Copper Property . . . . Pinal County, Arizona
Prince, Globe and Old Reliable Ore zones . . Pinal County, Arizona

CALIFORNIA

Big Horn Gold Mining Property. . . . . Los Angeles County, California
Garden Grove 400 Acres Mineral Rights. . . . Orange County, California
Gray Eagle Copper Mine . . . . Siskiyou County, California
Mendocino Nickel Property. . . . . Mendocino County, California
Siskon Gold and Copper Mine. . . . . Siskiyou County, California
Siskon Scoria. . . . . San Bernardino County, California
Zaca Gold and Silver Mine. . . . . Alpine County, California

MONTANA

Elkhorn Gold and Copper Property . . . . . . Jefferson County, Montana
Monitor Molybdenum Property. . . . . Lewis & Clark County, Montana
Yogo Sapphire Mine . . . . Judith Basin County, Montana

NEVADA

Aurora Group 50+ Patented Claims . . . . . . Mineral County, Nevada
Bisoni Vanadium Property . . . . Eureka County, Nevada
Bisoni-McKay Vanadium Property . . . . Nye County, Nevada
Black Horse Moly and Tungsten. . . . . Esmeralda County, Nevada
Central Comstock Mines . . . . Storey County, Nevada
Humboldt-Starlight Group of Claims . . . . . Pershing County, Nevada
McKay Copper - Treasure Box. . . . . Churchill County, Nevada
Mineral Hill Silver Property . . . . Eureka County, Nevada
Monitor (Bida) Copper Property . . . . White Pine County, Nevada
Nevada King Copper Property. . . . . Eureka County, Nevada
Siskon Silver Property . . . . Mineral County, Nevada
Valmy Copper Property. . . . . Humboldt County, Nevada
Yerington Property . . . . Mineral and Lyon Counties, Nevada

S P E C I A L   N O T I C E

THIS DESCRIPTION OF PROPERTIES AND HOLDINGS OF SISKON CORPORATION IS NOT TO BE CONSTRUED A PART OF THE INDEPENDENT C.P.A. STATEMENT APPEARING TO THE LEFT OF THE DOUBLE LINES HER

840 NORTH SIERRA STREET
RENO, NEVADA 89503

H. B. CHESSHER, JR., VICE-PRESIDENT

TELEPHONE 323-5260
AREA CODE: 702

April 15, 1969

To the STOCKHOLDERS of SISKON CORPORATION:

In order that the Stockholders may be more fully informed about Siskon Corporation's activities, I am submitting the following briefs on some of the properties, towit:

AURORA GROUP OF MINING CLAIMS, Esmeralda Mining District, Mineral County, Nevada. During 1968 the data available on the Aurora Group of approximately 87 claims was carefully researched with the thought of conducting examinations and exploration during 1969. Recently, several major companies have inquired regarding the availability of the Aurora Group but Siskon's new management wishes to thoroughly investigate the Group before making any decisions. Aurora was a gold and silver producing bonanza mining camp in the 1850's and 1860's and has had occasional limited production since then. The recent increases in gold and silver prices have renewed interest in this camp.

CENTRAL COMSTOCK MINES, Virginia City, Storey County, Nevada. Considerable research was done on the data for Siskon's claims (Savage, Hale and Norcross and Chollar-Potosi) during 1968 in preparation for a proposed exploration and development program in 1969. The Natural Resources Division of the Union Pacific Railroad Company conducted considerable exploration work during 1968, mostly in the form of drilling, on the claims immediately adjacent and south of Siskon's claims.

Siskon's three claims are famous for their bonanza ore productions as reported in the Nevada State Bureau of Mines publication prepared in 1941 and 1942, named "Individual Histories of the Mines of the Comstock", towit: Chollar-Potosi, 1866 to 1904, Gross Value of $13,882,765.97; Hale & Norcross, 1875 to 1926, Gross Value of $10,146,435.49; and Savage, 1863 to 1909, Gross Value of $18,356,034.33. Above production totals over $42,000,000. Most of the bonanza production was from high grade ore and future operators are now concerned with mining the lower grade ores with inexpensive open pit methods.

COPPER HILL (MIRABAL) PROPERTY, Copper Hill Mining District, Valencia County, New Mexico. John H. Trigg completed the purchase of fifteen unpatented mining claims late in November of 1968 and a Quitclaim Deed was issued to Trigg. Siskon Corporation realized a profit of approximately $10,000 while its President, Mr. H. B. Chessher, Sr. was hopefully negotiating for the acquisition of said fifteen claims; however, the payment by John H. Trigg brought the negotiations to an abrupt halt and Siskon released all interest in the property.

ELKHORN GOLD AND COPPER PROPERTY, Elkhorn Mining District, Jefferson County, Montana. Siskon Corporation has ten patented lode mining claims under option in this area. This district is located in the overlying sediments and andesites at the easterly edge of the Boulder granite batholith and said district has had considerable production in precious and base metals. Geologic and geophysical reconnaissance should be conducted in this area with the thought of discovering and developing large low grade zones of copper and gold mineralization.

GRAY EAGLE COPPER MINE, Siskiyou County, California. During 1968, the Standard Slag Company continued exploration by rotary and diamond drilling and it is believed that they are planning a medium sized open pit mine and flotation mill. Standard Slag Company has a straight 20 year lease on the property, with an option to renew the lease for 10 additional years, which commenced on May 1, 1967. For the first two years of the lease Standard Slag Company was required to do at least 600 feet of exploratory drilling for each 3 month period or pay a minimum royalty of $1,500. Commencing May 1, 1969 the minimum royalty becomes $1,250 per month. The production royalty is 7-1/2% of the net smelter or the net mint returns.

MCKAY COPPER-TREASURE BOX PROPERTY, Table Mountain Mining District, Churchill County, Nevada. Eleven patented and four unpatented lode mining claims are controlled by Siskon Corporation in this area. Siskon's management has tentative plans to conduct geologic and also geophysical investigations upon the areas of most intensive copper mineralization with the ultimate plan to drill several preliminary deep holes. The property is held under a purchase price option for $100,000 with a minimum monthly payment of $300 and a 6% net smelter return production royalty. On the first of March of 1969 a total of $26,300 had been paid on the option price, leaving a balance due of $73,700. A major mining company has recently commenced payment on an option for a group of adjacent claims after a drilling campaign in 1968.

MENDOCINO NICKEL PROPERTY, Mendocino County, California. Siskon Corporation engaged the law firm of Brobeck, Phleger & Harrison, San Francisco, California during November of 1968 to continue to pursue Siskon's and H. B. Chessher, Sr.'s civil action vs. Edythe L. Flaherty, Administratrix of the Estate of Ralph C. Flaherty, Deceased and Edythe L. Flaherty, individually, in the U. S. District Court for the Northern District of California. The action substantially is a suit for specific performance of a contract for the purchase of a parcel of land, being generally described as Section 6, excepting Lots 5, 6, 11 and 12, T. 23 N., R. 16 W., M.D.B.M., County of Mendocino, State of California. Said land contains large deposits of lateritic low grade nickel zones and it is believed that such deposits in the United States will someday be valuable for domestic nickel production.

MINERAL HILL SILVER PROPERTY, Mineral Hill Mining District, Eureka County, Nevada. During 1968 Siskon Corporation increased its holdings from 5 patented lode mining claims to 9 patented lode mining claims and 7 unpatented lode mining claims. Siskon also owns 160 acres of fee land in the area plus several water rights. The claims cover most of the area where over $2,500,000 in silver, lead, copper, zinc and gold was produced in the pre-1913 through 1938 period as reported in the Nevada Bureau of Mines Bulletin No. 64. The ore occurs as replacement bodies in the limestone and recent sampling of the numerous dumps and outcrops have shown low grade silver values which may be indicative of a large zone amenable to mining by inexpensive open pit methods. The area is worthy of intensive geologic study and exploration. The contact between the ore bearing limestone and the shales and chert beneath is thought to be the Roberts Mountain thrust fault, which fault and adjacent areas have received considerable publicity and exploration in Nevada due to the discovery in recent years of several new mines.

Nevada. On July 29, 1968, Siskon Corporation surrendered its option agree
a total of 213 unpatented mining claims, adjacent to and westerly from Ken
claims, due to the heavy financial commitments involved. On November 1, 1
Siskon Corporation obtained a 50% interest in 2 option agreements for a to
233 unpatented mining claims being the same 213 claims mentioned above plu
ditional claims. Occidental Minerals Corporation obtained an Assignment o
ment for 75 of above claims on November 26, 1968, which claims are at the
end of the group of 233 claims. After Occidental had conducted geologic a
physical investigations, its management made the decision to drill a deep
on a geophysical anomaly, said hole having been commenced during February

NEVADA KING COPPER PROPERTY, Maggie Creek Mining District, Eureka County,
Siskon Corporation owns 51% of the issued capital stock of the Nevada King
Co., which company owns 8 patented lode mining claims and one millsite abo
miles northwesterly from Carlin, Nevada. The copper mineralization occurs
licified limestone which appears to be in the form of a large dome. Durin
through 1958 shipment records from American Smelting and Refining Company
that at least 167 railroad cars of about 3.4% copper ore were mined and sh
from the property. Most of this ore was obtained from two small open pits
1958 shallow vertical rotary holes (250 feet deep or less) have been drill
tempting to expand the mineralized zones but prospecting at such shallow d
not been successful to date. It is planned to conduct more thorough geolo
tigations on the property with the thought of conducting a deep drilling p

OLD RELIABLE BRECCIA PIPE (from surface down to 500 foot level) AND LEASE
ADJOINING PHELPS DODGE CORPORATION'S MINING CLAIMS, Pinal County, Arizona.
May 29, 1968 all of Siskon's rights, reserved in the Newmont and Magma agr
of May 16, 1966, as amended, were assigned to Occidental Minerals Corporat
ject to a 5% royalty, with a minimum monthly royalty payment of $1,000 per
commencing May 29, 1969, payable to Siskon from net smelter returns and al
ject to Occidental's payment of $30,000 to Siskon ($15,000 on November 29,
which was received, and $15,000 on May 29, 1969) for all of Siskon's perso
property and improvements on the premises. Siskon also assigned to Occide
(on August 9, 1968) all of Siskon's equity under its lease of August 29, 1
amended, from Phelps Dodge Corporation on the adjoining mining claims for
overriding royalty. Occidental Minerals Corporation has been conducting e
exploration and development work on the copper bearing zones.

OLD RELIABLE COPPER MINE, Pinal County, Arizona. During 1968 Newmont Expl
Limited and Magma Copper Company tendered their second $100,000 payment du
Siskon Corporation upon the $500,000 purchase price, for mining claims and
land, as agreed upon in the Option Agreement dated May 16, 1966. Siskon h
tained a permanent production royalty varying from 2% to 5%, according to
daily tonnages milled, and a permanent minimum monthly royalty of $3,333.3
mences thirty days after, if and when, Newmont and Magma complete the paym
the $500,000 purchase price. Newmont and Magma also have an option to pur
the permanent royalty for $4,500,000 from Siskon, if exercised on or befor
1971. Newmont and Magma completed the first phase of their deep explorati
ing in the American Eagle area early in 1968 and then proceeded to drill t
Aldwinkle group of contiguous claims which are controlled by Newmont and M
Newmont and Magma plan to drill at least one deep hole in 1969 on Siskon's

SISKON GOLD AND COPPER MINE, Dillon Creek Mining District, Siskiyou County
fornia. During 1968, the data on the Siskon Mine was thoroughly researche
the plan to conduct serious investigations and exploration during 1969. T
erty has the potential of a large low grade ore producer of copper, gold a
and further exploration may discover more high grade ore bodies such as th
bodies which were mined and milled in the 1953 - 1960 period which produce
imately $3,600,000 in gold and silver, mostly in the form of bullion. The
Mine is considered to be one of Siskon's more promising properties and con
time and funds will probably be expended upon said mine in the near future

VALMY COPPER PROPERTY, Battle Mountain Mining District, Humboldt and Lande
Nevada. On February 10, 1968, the Union Pacific Railroad Company obtained
Assignment Agreement from Siskon Corporation for 76 of the total of approx
234 unpatented mining claims which Siskon Corporation controlled. Union P
conducted geologic investigations and exploration by drilling and then dec
to continue with the project and quitclaimed the 76 claims back to Siskon
tion on February 6, 1969. Only 76 of the 234 unpatented mining claims wer
dated by assessment work during 1968.

YOGO SAPPHIRE MINE, Judith Basin County, Montana. In July of 1968 Siskon
ration sold the Yogo Sapphire Mine to Mr. Herman Yaras of Beverly Hills, C
nia for a total price of $580,000 less sale commission. $15,000 was recei
ing July of 1968 and another $15,000 was received during September of 1968
Yaras assigned his position to Sapphire Village, Inc., a Delaware corporat
September 19, 1968. Sapphire Village, Inc. is to pay $300,000 into escrow
First National Bank of Lewistown, Montana on or before July 15, 1969, at w
the $250,000 installment Note (duly issued by Sapphire Village, Inc. in fa
Siskon Corporation) and the Mortgage which secures said $250,000 Note, is
delivered to Siskon Corporation provided said First National Bank of Lewis
tually pays the $300,000 to Siskon on or before July 15, 1969. Sapphire V
Inc. plans to operate the mine and also to subdivide the real estate and s
for summer cabins and to allow property owners to prospect and pan for sap
on certain mining claims, using hand tools only. A brochure depicting Sap
Village, Inc.'s project is printed in the Lapidary Journal for February of

ZACA GOLD AND SILVER MINE, Monitor Mining District, Alpine County, Califor
January 30, 1968, Mr. Harry J. Sykes assigned all his agreements (Option t
chase Lovestedt lease and the Option to purchase Siskon's claims for $5,00
to Pan Minerals, Inc., a Nevada corporation. During 1968, Mr. C. B. Loves
lessee, continued to occasionally mine and mill higher grade gold and silv
and Pan Minerals, Inc. performed some exploration work. On March 3, 1969,
Lovestedt informed Siskon that Pan Minerals, Inc. had deposited funds for
exploration at the Zaca Mine and that work would commence immediately. Th
mum royalty of $1,000 per month has been paid consistently to Siskon by Pa
erals, Inc. since January 30, 1968. The next major payment due Siskon is
and must be paid on or before December 21, 1970; and the $5,000,000 purcha
(less all previous payments made) is due on or before December 21, 1977.
hoped that Pan Minerals, Inc. will vigorously pursue the exploration work
Zaca Mine in an attempt to discover sufficient mineralization to make the
a profitable large low grade producer of gold, silver and several base met

Respectfully submitted,

H. B. Chessher, Jr., Vice-President

Item 24
OFR 79-

Cucomungo Deposit

The Cucomungo (Sorensen and Roper properties, Alum Gulch deposit, Tule Canyon deposit, Poison Spring deposit, Siskon property, Chessher property, Cucamungo deposit, Alum Creek deposit) molybdenum deposit is in the Magruder Mountains in the vicinity of Poison Spring, mainly in Secs. 2 and 3, T. 7 S., R. 39 E., southern Esmeralda County. The deposit is accessible from Lida to the north via Pigeon and Log Springs.

The deposit reportedly was discovered in 1917 by Bob Sorensen who located a number of claims. In the 1920's and 1930's, Gus Roper located some claims and drove an adit (the first 220 feet reportedly ran 0.1% MoS_2, the next 110 feet 0.4% MoS_2, the next 50 feet was essentially barren.). In 1938, the Roper claims, which were held by the Nevack Moly Co., were sold at a sheriff's sale to satisfy a $1,678 judgement. In 1939, Freeport Sulphur optioned the Roper and Sorensen groups of claims, extended the Roper adit, and drilled a 200-foot, horizontal hole from the adit face; six other holes were drilled from the surface (fig. __). H. B. Chessher (Siskon Moly Corp.) acquired the Roper claims, and built access roads, drilled several holes, and did some surface sampling.

In 1960, Bear Creek Mining Co. optioned both the Roper and Sorensen properties, and located some additional claims. Fourteen diamond-drill holes were drilled; one hole is 1,438 feet deep, the other holes are less than 800 feet deep (fig. __). In addition a number of shallow wagon-drill holes were drilled. Extensive roads have been built to give access to drill sites. Detailed geologic mapping also was done. Their option was dropped in 1961.

During 1967, the Molybdenum Corporation of America explored the deposit; they resampled some of the Bear Creek core and did additional churn drilling (fig. __). In 1969 and 1970, Geochemical Surveys, Dallas, Texas, in a joint venture with Pan American Sulphur Co., made detailed geochemical surveys of the area, and drilled thirteen holes (fig. __) west and southwest of the area previously drilled.

Except for the Roper adit which is approximately 900 feet long including several short lateral workings, the only development has been the extensive roads and drill holes. The Roper adit extends northeast from the bottom of Alum Canyon at a point a short distance downstream from Poison Springs.

There has been no production of molybdenum or other mineral commodities.

The Rocks. Paleozoic limestone and shale have been intruded by two stocks which are part of the Jurassic Inyo batholith (McKee and Nash, 1967). The older "Uncle Sam" quartz monzonite porphyry (Sylvania adamellite of McKee, 1962), crops out over a large area southwest of the deposit; the younger, "Cottonwood" granite (Tule granite of McKee) covers a large area at, and east of, the deposit (fig. __). Isotopic age dating indicates that the intrusives are both about 150 million years old (Schilling, 1965). At the surface, the two granitic rocks are separated by a narrow, northwest-trending wedge of sedimentary rocks (fig. __), but drill-hole data indicates that they are in contact at depth. The sedimentary rocks also crop out over large areas northwest to northeast of the deposit (Albers and Stewart, 1965).

Figure __. Geologic Map of the Cucomungo deposit.

The sedimentary and intrusive rocks locally are capped by andesitic basalt flows and pyroclastic rocks (fig. __). Two basalt plugs intrude the Cottonwood granite at the deposit, and appear to be feeders for the extrusive rocks.

Aplite dikes cut the granitic rocks. The borders of the Cottonwood granite stock have an aplitic texture grading inward to coarse-grained, locally porphyritic, rock. The Uncle Sam porphyry grades outward from a medium-grained rock having feldspar phenocrysts over an inch long to a finer-grained, inequigranular rock. In detail, the textural variations, in both intrusive rocks, is quite complex, and the above description is at best a gross generalization.

Structures. A northwest-trending shear zone occurs in the Cottonwood granite and wedge of metasedimentary rocks along the contact with the Uncle Sam porphyry. The zone is 1,000 feet wide and at least 10 miles long, the rocks within the zone having been broken up to a much greater degree than the surrounding rocks. Shearing apparently began before the intrusion of Uncle Sam quartz monzonite, and helped to control its emplacement, at least partially controlled the emplacement of the later Cottonwood pluton, and continued until after alteration and mineralization had taken place. The zone parallels the Cottonwood granite-Uncle Sam porphyry contact, and the regional structural pattern. Northwest of the intensively drilled area, the shear zone, mineralization, and alteration is hidden under a blanket of gravel; although two Molycorp holes were drilled here, only a single hole drilled by Geochemical Surveys penetrated this cover.

Metamorphism. The limestone and shale have been metamorphosed to marble, hornfels, and phyllite. The intensity of alteration varies irregularly. Some of the limestone beds have been altered to skarn. Bands of skarn (mainly epidote and garnet) are exposed in the wedge of metasediments between the two granitic stocks. Scheelite has not been noted in the skarn in the immediate vicinity of the deposit.

Alteration. Hydrothermal alteration has greatly affected the metasediments and Cottonwood granite in the shear zone. These rocks have been sericitized, silicified, and argillized. The more intensely altered area is at Poison Springs. Here, the most intense alteration, which extends for 3/4 of a mile along the shear zone, is delineated by steep, rapidly-eroding, treeless, yellow "badlands." Much of the intense look of the alteration at Poison Springs apparently is due to weathering rather than the original hydrothermal alteration; this is an area of abundant pyrite, and the highly acid and iron-rich conditions during weathering produced much of the argillization and distinctive yellow-staining. The intensity of alteration decreases both northwestward and southeastward along the shear zone.

Along the margins of the shear zone, where the alteration is the least intense, feldspars have been partially sericitized and argillized.

In the most intensely altered rock, the alteration is pervasive, clay sericite and/or quartz completely flooding the rock. Quartz "eyes" are the only remnants of the original granitic texture in much of this intensely altered rock. The silicification extends outward from numerous quartz veinlets that crisscross the altered area, forming a stockwork. These harder ribs are separated by softer sericitized and argillized rock. The distribution of the various types of alteration is irregular, and commonly overlaps.

In the less intensely altered rock, the alteration is not pervasive. The rock commonly is highly sericitized and silicified along quartz veinlets, but relatively unaltered rock remains away from the veinlets.

An interesting type of alteration, termed "aplite," is widespread but irregularly distributed through the altered area. This type alteration differs from the ordinary silicification in that the quartz "eyes" have been destroyed, the rock having a fine-grained, even, "aplite" texture. This "aplite" (usually consists of feldspar, sericite, and quartz and forms resistant masses (often dike-like) which stand above the softer altered rock.

<u>Mineralization</u>. <u>Molybdenite</u> occurs in the altered Cottonwood granite and metasediments, along the shear zone. Small flakes and rosettes of molybdenite are disseminated through the altered rock and along the edges of the

quartz veinlets. Pyrite also is disseminated through the altered rock (where it appears to replace mafic minerals) and in the quartz veins, but apparently has no relation to the distribution of the molybdenite. The disseminated molybdenite is rare in clay alteration; where it occurs in a generally argillic zone it is intimately associated with a silicified or quartz-sericite subzone or with a quartz veinlet. The distribution is quite irregular and spotty. A geochemical survey of the distribution of molybdenum in soil (fig. __) showed anomalously high values along the shear zone with the highest values centered on the Cottonwood granite - metasediment contact which also is the center of the shear zone. Background values average 2 ppm Mo, values above 10 ppm can be considered anomalous, and values above 50 ppm especially significant. In areas that contained more than 50 ppm Mo the bedrock tended to contain roughly the same amount of molybdenum as the soil; only a narrow zone of 10-50 ppm rock occurs outward compared to the wider, diffused zone in the soil.

Copper minerals are almost completely absent in the molybdenum deposit, copper rarely exceeding several hundred parts per million. The copper in the soil forms an elongate aureole around the molybdenum anomaly, but the southwest limb (centered on the wedge of metasediments) contains much higher values (fig. __). Background ~~of~~ values average 20 ppm Cu, no samples showed less than 5 ppm. Tungsten and tin reportedly also are present in anomalously-high amounts. Zinc, like copper, is present peripheral to the molybdenum anomaly, with the highest concentrations in the metasediments, and in the most highly altered area (above Poison Springs). Because the background value is 0 (below detection limits), 1 ppm Zn is anomalous, yet concentrations of ~~ores~~ over 500 ppm are common within the anomaly.

Secondary minerals are abundant at the surface, however molybdenite and pyrite also are quite common. Limonite, iron sulfate, jarosite, selenite, and other oxidation products are common. The water from Poison Spring and Roper adit contain appreciable amounts of molybdenum. As is common in many molybdenite deposits, there has been relatively little leaching or secondary enrichment, and the grade of the molybdenum remains constant from the surface to a depth of at least 800 feet. Yellow ferrimolybdite (?) is present, but is not readily recognizable because of the other abundant yellow secondary minerals; it apparently does not migrate any distance. Dark blue ilsemannite (?) is abundant on the dump of the Roper adit and along a fault zone in the most intensely altered part of the altered area. The mineral is presently being formed on the dump at points where water from the adit evaporates. At both localities, the "ilsemannite" apparently has migrated some distance before being deposited. The dark blue color changes to very pale blue then pinkish white with increasing humidity or when wet. The mineral is highly soluble and can exist only in arid climates. Actually, it probably occurs as Cucomungo as a whole family of minerals containing varying amounts of water and varying proportions of different valent molybdenums; some varieties may also contain sulfate.

Other Occurrences near Cucomungo

Many small shows of molybdenite are present in the area as offshoots of the main Cucomungo deposits.

McBoyle Prospect. The McBoyle or Copper Canyon prospect is south of the Cucomungo deposit in Copper Canyon at the California-Nevada line in unsurveyed Sec. 16, T. 7 S., R. 39 E. One hundred feet above the canyon floor, molybdenite, pyrite, and minor quartz occur along a fault along the contact between "Uncle Sam" quartz monzonite porphyry and marble. In the canyon bottom, ilsemannite (?) and ferrimolybdite stain a 4-inch fault zone in the quartz monzonite.

Cucomungo Canyon. On the west side of Cucomungo Canyon in the SW 1/4

Sec. 5, T. 7 S., R. 39 E. near the California-Nevada line, molybdenite-bearing quartz veins in "Cottonwood" granite are exposed in a small pit.

GOLDPOINT MINING DISTRICT, ESMERALDA COUNTY

A large body of granite is exposed in the western part of Slate Ridge, smaller masses and dikes of the same rock being exposed elsewhere in the Ridge. The granite intrudes Cambrian shale, limestone, and quartzite. The sedimentary rocks are intensely metamorphosed near the granite but only slightly metamorphosed elsewhere. Aplite, pegmatite, quartz monzonite porphyry, and diorite porphyry dikes intrude the granite; rhyolite flows locally cap the other rocks. The granite is coarse-grained, and consists of orthoclase, quartz, biotite, and accessory zircon and magnetite.

Item 24

P.O. Box 466
Goldfield, Nevada

June 12, 1961

Mr. John H. Schilling
Nevada Bureau of Mines
University of Nevada
Reno, Nevada

Dear John:

Please forgive the lack of promptness in replying to your request of May 29, 1961. Abundant excuses, all quite plausible, come to mind the details of which I shall not bore you with.

With reference to page 3, paragraph 4, I do not know, but perhaps a brief reconstruction of the sequence of events as I see them taking place here may be of some value to you:

1. Intrusion of the Uncle Sam quartz monzonite porphyry;
2. Intrusion of the Cottonwood quartz monzonite
    a. the implacement partially controlled by pre-existing structure (?)
3. Shearing within the Cottonwood parallel to the Uncle Sam-Cottonwood contact;
4. Implacement of aplite at irregular intervals along the structure developed by three above;
5. Continued development of structure essentially parallel to the Uncle Sam-Cottonwood contact;
6. Introduction of hydrothermal alteration (and start of sulfide mineralization?)
    a. development of most pervasive alteration in areas of strongest structure, i.e. areas of greatest permeability
    b. pervasive alteration tends to reduce permeability (?);
7. Continued development of structure;
    a. competent rocks fracture, this would include silicified zones in pervasively altered areas; strongly altered rocks deform plastically (?);
8. Start or continuation of sulfide mineralization and to a lesser degree continuation of hydrothermal (?) alteration

a. character of the mineralizing-altering solutions and structural setting such that alteration not developed to the same degree as previously;

9. Continued development of structure parallel and transverse to principal zone;
10. Erosion;
11. Extrusion (intrusion as well) of volcanics;
12. Erosion

Needless to say, a lot of what is listed above is highly speculative and in all probability will be changed with the advent and assimilation of additional data.

On page 4 I might add that molybdenite is not found in clay alteration; if molybdenite does occur in a generally argillic zone it is intimately associated with a silicified or quartz-sericite sub zone or rarely with a quartz veinlet.

Also, it is felt that disseminated pyrite is probably replacement of mafics, therefore disseminated and vein pyrite are of diverse origins.

All of us were delighted and stimulated by your visit and hope that you will have the opportunity to return again. I would like to thank you for the copy of your Questa paper which I am reading with much interest.

With kindest regards, I remain

Yours very truly,

Bryant D. Walker

BW/bkw

CUCOMUNGO DEPOSIT

Location. The Cucomungo (Alum Gulch deposit, Tule Canyon deposit, Poison Spring deposit, Sorenson and Roper properties, Siskin property, Chessher property, Cucomunga deposit, Alum Creek deposit) molybdenum deposit is in the Magruder Mountains in the vicinity of Poison Spring, mainly in Secs. 2 and 3, T. 7 S., R. 39 E. (see U. S. Geological Survey, Magruder Mtn. 15-minute topographic quadrangle map), southern Esmeralda County. The deposit is accessible from Lida to the north via Pigeon and Log Springs.

History and Production. The deposit reportedly was discovered in 1917 by Bob Sorenson who located a number of claims. In the 1920's and 1930's, Gus Roper located some claims and drove an adit. In 1938, the Roper claims, which were held by the Nevack Moly Co., were sold at a sheriff's sale to satisfy a $1678 judgement. In 1939, Freeport Sulphur optioned the Roper and Sorenson groups of claims, extended the Roper adit, and drilled a 200-foot, horizontal hole from the adit face; apparently some additional diamond drilling also was done. H. B. Chessher (Siskon Moly Corp.) acquired the Roper claims, and built access roads, drilled several holes, and did some surface sampling. In 1959, Bear Creek Mining Co. optioned both the Roper and Sorenson properties, and located some additional claims. To date, 10 diamond-drill holes have been drilled; one hole is ~~1,300~~ 1438 feet deep, the other holes are less than 800 feet deep. Extensive roads have been built to give access to drill sites. Detailed geologic mapping is in progress.

There has been no production of molybdenum or other mineral commodities.

Development. Except for the Roper adit which is approximately 900 feet long including several short lateral workings, the only development has been the extensive roads and drill holes. The Roper adit extends northeast from the bottom of Alum Canyon at a point a short distance downstream from Poison Springs.

Previous Work. There are no published descriptions of this deposit.

The Rocks. Limestone and shale have been intruded by two stocks. The older "Uncle Sam" quartz monzonite porphyry crops out over a large area southwest of the deposit; the younger, "Cottonwood" granite (or quartz monzonite?) covers a large area at, and east of, the deposit. At the surface, the two granitic rocks are separated by a narrow, northwest-trending wedge of sedimentary rocks, but drill-hole data indicates that they are in contact at depth. The sedimentary rocks also crop out over large areas northwest to northeast of the deposit. The sedimentary and intrusive rocks locally are capped by andesitic basalt flows and pyroclastic rocks. Two basalt plugs intrude the Cottonwood granite at the deposit, and may be feeders for the extrusive rocks.

Aplite dikes cut the granitic rocks. The borders of the Cottonwood granite stock have an aplitic texture grading inward to coarse-grained rock. The Uncle Sam porphyry grades outward from a medium-grained rock having feldspar phenocrysts over an inch long to a finer-grained, inequigranular rock; in appearance, it is of the so called "Sierra Nevadian" type.

Structures. A northwest-trending "zone of weakness" occurs in the Cottonwood granite along the contact with the wedge of sediments. The zone is 1,000 feet wide and at least 4 miles long, the rocks within the zone apparently having been broken up to a much greater degree than the surrounding rocks. The zone is related to the Cottonwood granite-Uncle Sam porphyry contact, and parallels the regional structural pattern.

Metamorphism. The limestone and shale have been metamorphosed to marble and hornfels. The intensity of alteration varies irregularly. Some of the limestone beds have been altered to skarn. Bands of skarn are exposed in the wedge of metasediments between the two granitic stocks. Scheelite has not been noted in the skarn in the immediate vicinity of the deposit.

Alteration. Hydrothermal alteration has greatly affected the metasediments and Cottonwood granite in the "zone of weakness". These rocks have been sericitized, silicified, and argillized. The more intensely altered area is at Poison Springs. Here, the most intense alteration, which extends for 3/4 of a mile along the zone of weakness, is delineated by steep, rapidly-eroding, treeless, yellow "badlands". The intensity of alteration decreases both northwestward and southeastward along the zone of weakness.

Along the margins of the zone of weakness, where the alteration is the least intense, feldspars have been partially sericitized and argillized.

In the most intensely altered rock, the alteration is pervasive, sericite and/or quartz completely flooding the rock. Quartz "eyes" are the only remnants of the original granitic texture in much of this intensely altered rock. The silicification extends outward from numerous quartz veinlets that crisscross the altered area. These harder ribs are separated by softer sericitized and argillized rock. The distribution of the various types of alteration is irregular, and commonly overlaps.

In the less intensely altered rock, the alteration is not pervasive. The rock commonly is highly sericitized and silicified along quartz veinlets, but relatively unaltered rock remains away from the veinlets. (Are the quartz veinlets less closely-spaced here, or have the altering solutions penetrated shorter distances?).

An interesting type of alteration, termed "aplite", is widespread but irregularly distributed through the altered area. This type alteration differs from the ordinary silicification in that the quartz "eyes" have been destroyed, the rock having a fine-grained, even, "aplite" texture. This "aplite" forms resistent masses which stand above the softer altered rock.

Mineralization. Molybdenite occurs in the altered Cottonwood granite, and to a limited extent in the metasediments, along the zone of weakness. Small flakes and rosettes of molybdenite are disseminated through the altered rock and along the edges of the quartz veinlets. Pyrite also is disseminated through the altered rock and in the quartz veins, but apparently has no relation to the distribution of the molybdenite. The disseminated molybdenite is not restricted to any one type of alteration, nor is there any apparent overall difference in grade. The distribution is quite irregular and spotty. Copper minerals are almost completely absent, in the molybdenum deposit, copper rarely exceeding several hundred parts per million. Tungsten is present in similar amounts.

Secondary minerals are abundant at the surface, however molybdenite and pyrite also are quite common. Limonite, iron sulfate, jarosite, selenite, and other oxidation products are common. The water from Poison Spring and Roper adit contain appreciable amounts of molybdenum. As is common in many molybdenite deposits, there has been relatively little leaching or secondary enrichment, and the grade of the molybdenum remain constant from the surface to a depth of at least 800 feet. Yellow ferrimolybdite (?) is presnet, but is not readily recognizable because of the other abundant yellow secondary minerals; it apparently does not migrate any distance. Dark blue ilsemenite (?) is abundant on the dump of the Roper adit and along a fault zone in the most intensely altered part of the altered area. At both localities, the ilsemenite (?) apparently has migrated some distance before being deposited. The dark blue color changes to very pale blue with increasing humidity or when wet, suggesting that this mineral can exist only in arid climates.

Item 24

November 23, 1969

Summary of Drill Logs of Bear Creek Mining Company Core Holes, Cucomungo Spring Pro

2AA - altered Cottonwood granite from top to last cuttings at 832 feet.

3AA - altered Cottonwood granite from top to bottom at 737; alteration becomes less intense with depth.

4AA? - metasediments to 50 feet: Cottonwood granite to last cuttings at 480 ft.

5AA - altered Cottonwood granite from top to bottom at 650; no change in degree of alteration with depth.

6AA - andesite from top to bottom at 279.6.

7AA - altered Cottonwood granite to bottom at 671.2; alteration and molybdenite decrease with depth.

8AA - altered Cottonwoog granite to 305; 1 foot of Uncle Sam porphyry 305-306; altered Cottonwood granite 306-317; hornfels 317-320; silicified Cottonwood granite 320-346; hornfels 346-362; silicified Cottonwood granite 362-389; hornfels 389-408; silicified Cottonwood granite 408-410; metasediments 410-420; siliceous Cottonwood-like granite 420 to bottom of hole at 429.

9AA - altered Cottonwood granite to bottom of hole at 509.8; alteration and apparently molybdenite content increase with depth.

10AA - altered Cottonwood granite to 699; hornfels 699-717; silicified Cottonwood granite 717-733

11AA - altered Cottonwood granite from top to bottom at 445.2.

12AA - Hornfels to 249; fairly fresh Cottonwood granite from 249 to bottom at 263.5.

13AA - altered Cottonwood granite to 327; Uncle Sam porphyry 327-330; altered Cottonwood granite 330 to bottom of hole at 347.

14AA - altered Cottonwood granite to 30; metasediments to 422; Cottonwood granite converted to soft clay and sericite to 427; hornfels to 445; fault gouge to 461; Uncle Sam porphyry 461 to bottom of hole at 465.2.

The cores and cuttings of the above drill holes were logged by R. Zeller. Complete descriptions will be prepared soon.

(102)
Item 24

GEOCHEMICAL SURVEYS
2505 TURTLE CREEK BOULEVARD
DALLAS, TEXAS 75219

MAILING ADDRESS
P. O. BOX 19508

TELEPHONE
521-5145

October 16, 1969

Mr. John H. Schilling
Mackay School of Mines
University of Nevada
Reno, Nevada

Dear John:

Just a note to let you know that we have purchased all of the Sorenson claims at Cucomungo Springs area. Bob Zeller has done detailed geological and geochemical work and at sometime in the near future we are going to do some additional prospecting, including drilling. Bob and possibly I will be by to see you sometime in the next few weeks.

Best regards,

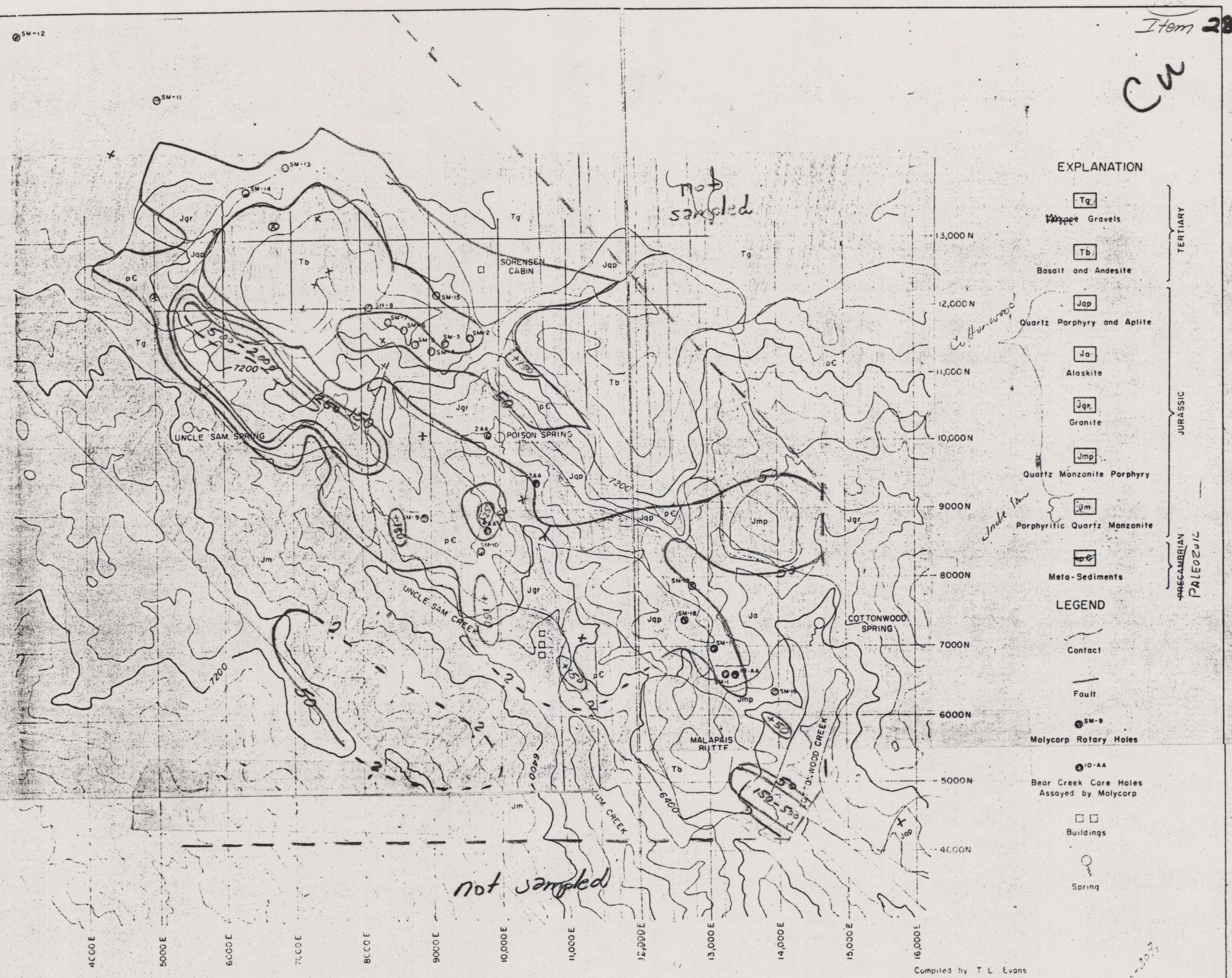
Bill

W. R. Ransone

WRR/es

Item 28

Cu

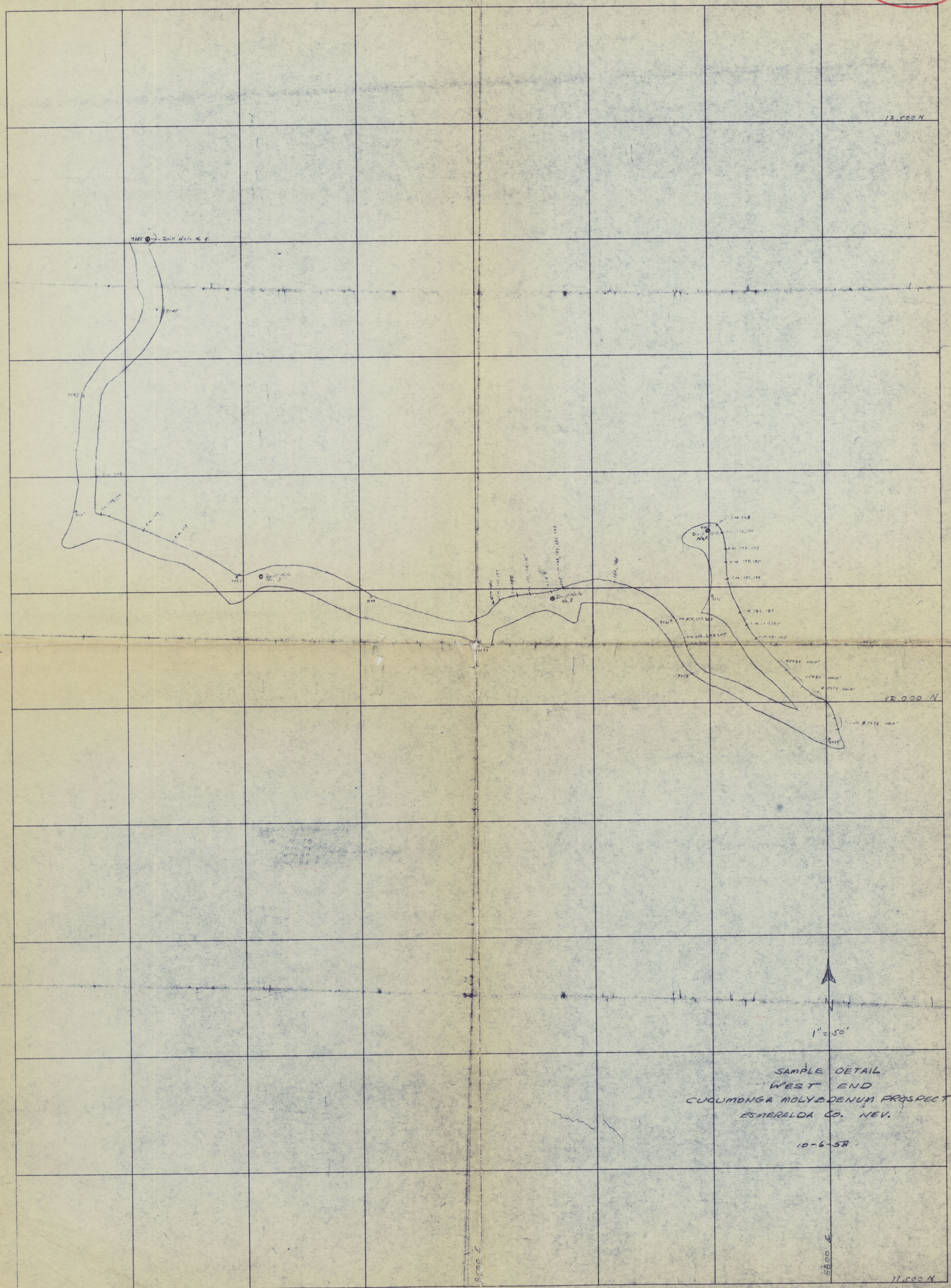


GENERALIZED GEOLOGIC MAP OF THE SORENSEN MOLY PROPERTY, ESMERALDA COUNTY, NEVADA

SCALE: 1 in. = 1050 ft.

4720 0023

CM-14



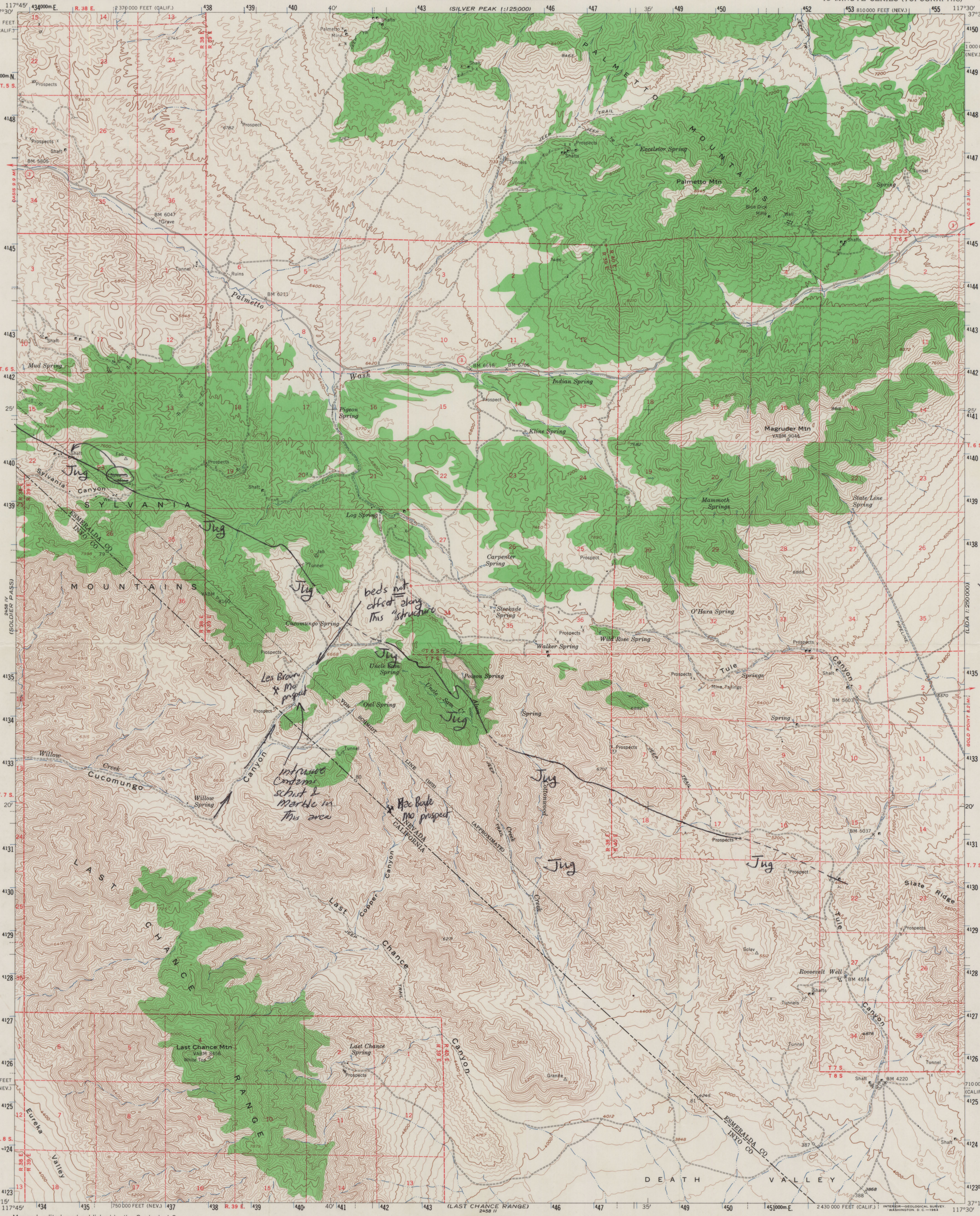
47200023 PLATE 2 (102)

CM-14 Item 24

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

MAGRUDER MTN. QUADRANGLE
NEVADA—CALIFORNIA
15 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1952. Advance field check 1957

Polyconic projection. 1927 North American datum
10,000-foot grids based on Nevada coordinate system, west zone and California coordinate system, zone 4
1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue

Dashed land lines indicate approximate locations
Land lines unsurveyed in T. 8 S.–R. 40 E. and in part in T. 7 S.–R. 39 E. Land lines omitted in T. 5 S.–R. 39 and 40 E., T. 6 S.–R. 39 E. and in part in T. 7 S.–R. 39 and 40 E. because of insufficient data

Unchecked elevations are shown in brown

UTM GRID AND 1957 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:62500

CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Light-duty — Unimproved dirt
State Route

QUADRANGLE LOCATION

MAGRUDER MTN., NEV.—CALIF.
N3715—W11730/15
1957
AMS 2458 I—SERIES V796

102 item 24

4720 0023

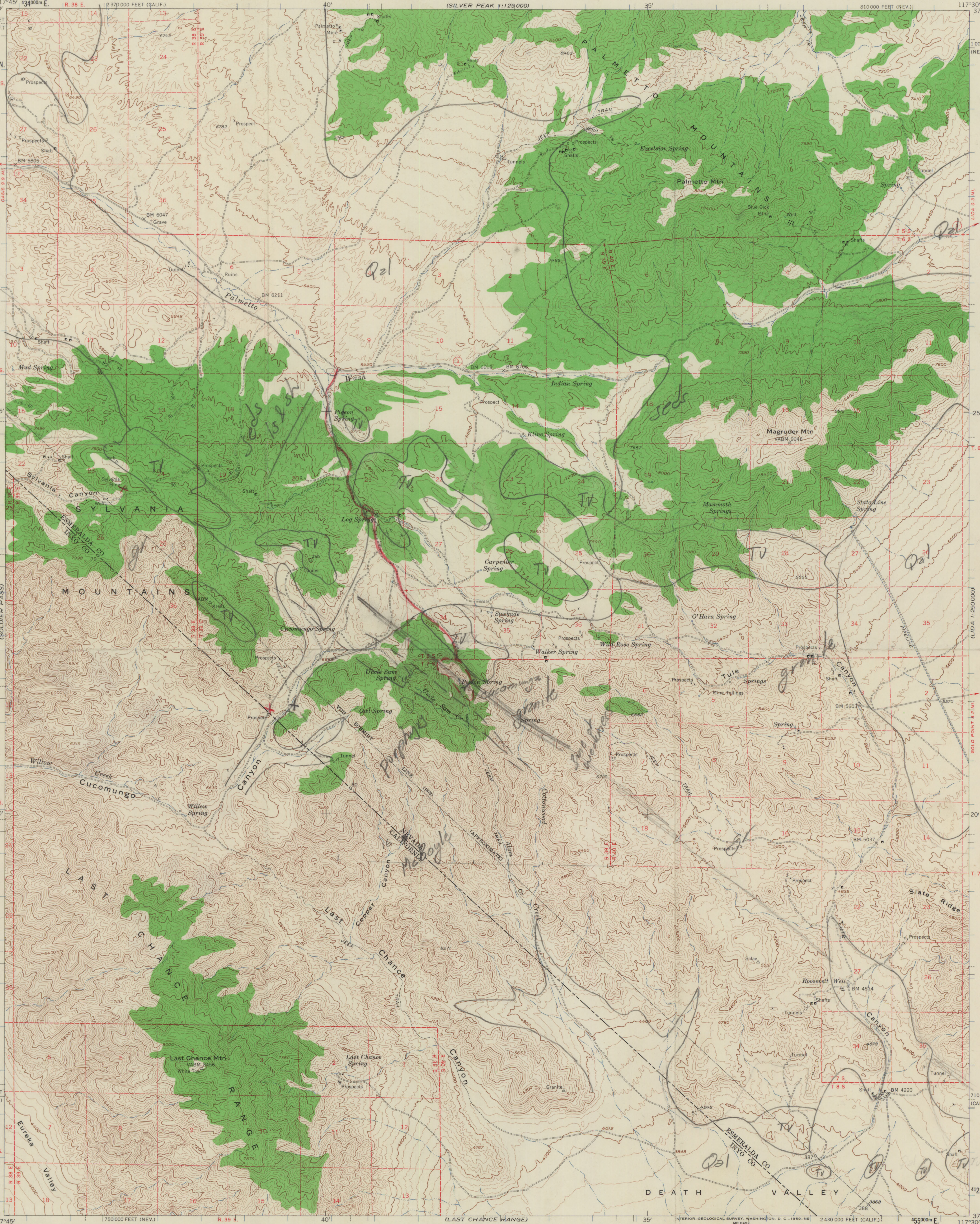
102

Item 24

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
EDMUND G. BROWN, GOVERNOR
HARVEY O. BANKS, DIRECTOR OF WATER RESOURCES

MAGRUDER MTN. QUADRANGLE
NEVADA–CALIFORNIA
15 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1952. Advance field check 1957

Polyconic projection. 1927 North American datum
10,000-foot grids based on Nevada coordinate system, west zone and California coordinate system, zone 4
1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue

Dashed land lines indicate approximate locations
Land lines unsurveyed in T. 8 S.–R. 40 E. and in part in T. 7 S.–R. 39 E. Land lines omitted in T. 5 S.–R. 39 and 40 E., T. 6 S.–R. 39 E. and in part in T. 7 S.–R. 39 and 40 E. because of insufficient data

Unchecked elevations are shown in brown

APPROXIMATE MEAN DECLINATION, 1957

SCALE 1:62500

CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Light-duty — Unimproved dirt

State Route

NEVADA
QUADRANGLE LOCATION

MAGRUDER MTN., NEV.—CALIF.
N3715—W11730/15

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