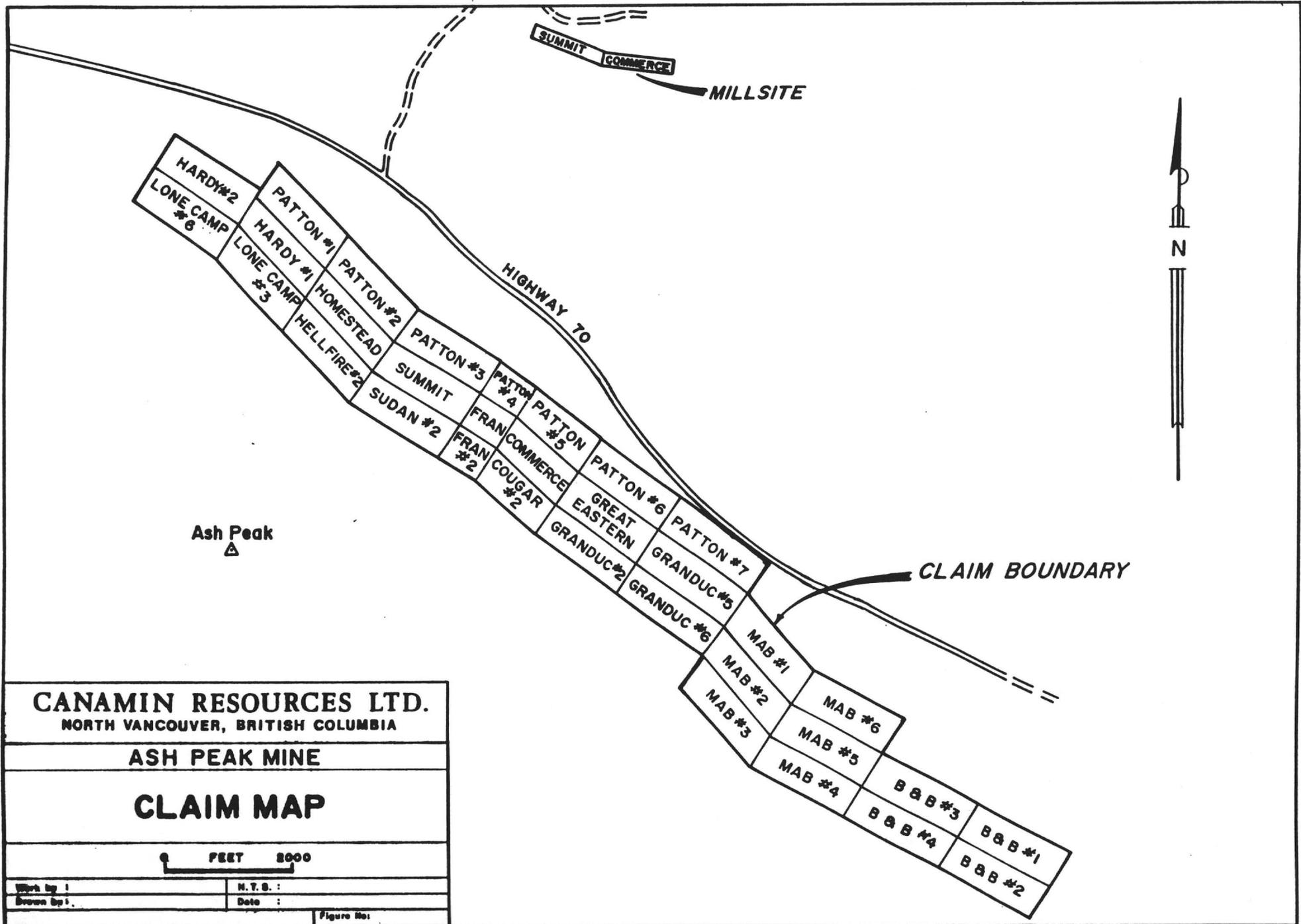


Six major, operating, southwestern U.S. copper smelters requiring silica flux:

<u>Firm</u>	<u>Smelter</u>	<u>Location</u>	<u>Firm</u>	<u>Smelter</u>	<u>Location</u>
ASARCO	El Paso	El Paso, TX	Magma	San Manuel	San Manuel, AZ
	Hayden	Hayden, AZ		Phelps Dodge	Chino
Cyprus	Inspiration	Inspiration, AZ	Hidalgo		Hachita, NM

ASH PEAK LOCATION MAP

With respect to road and rail haulages to area smelters requiring silica flux



CANAMIN RESOURCES LTD.
 NORTH VANCOUVER, BRITISH COLUMBIA

ASH PEAK MINE

CLAIM MAP

0 FEET 2000

Work by:	H.T.S.:
Drawn by:	Date:
Figure No:	

Figure No 2 , to memo by Don White, Feb. 1989

the manto-type target should only be considered after the information from the vein drilling is in hand.

There is a dearth of information on the geologic controls of Ash Peak mineralization despite voluminous historical records and abundant assay plots. The whys and wherefores of the old deposits are still nebulous and thus I must rely heavily on the opinions of those authors who have devoted more time to its study than I. They are mainly the Sage Associates' 1976 report and Richard Woodcock's 1988 report. Some additional exploration ideas are gleaned from the memos of Phelps Dodge and Inspiration (both former operating lessees).

Geology salient to understanding the exploration ideas

Those controls of mineralization that we may now recognize are:

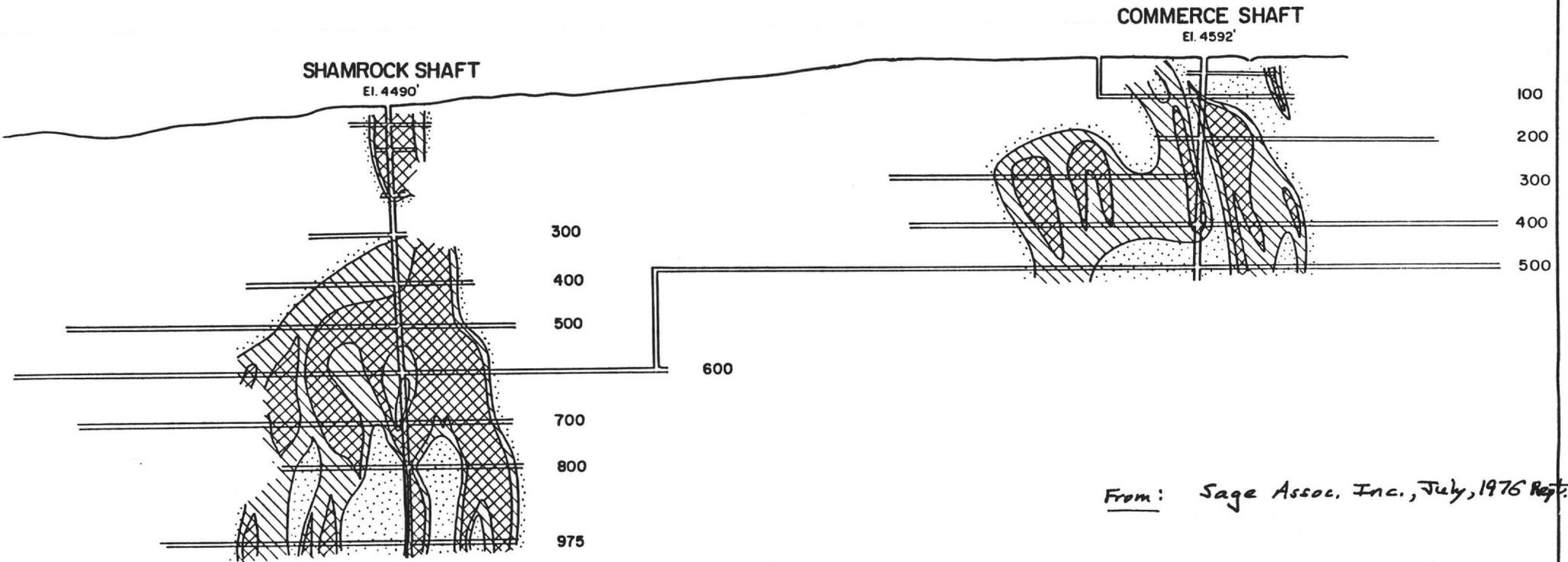
- 1) Fault control of epithermal quartz veins; the Ash Peak fault is the all-critical structural host for the main Ash Peak vein. Parallel or splay faults are thought to host the footwall and hanging wall veins and others. These faults are high angle features cutting the subhorizontal Tertiary volcanic rocks.
- 2) Flexures in the faults host the better thicknesses and grades; deflections (figures 4 and 5) in the surface trace of the Ash Peak fault correspond to the Commerce and Shamrock ore bodies and the Hardy shaft with its small amount of reported high grade. It seems likely that motion along the Ash Peak fault yielded better openings for subsequent silicification at those sites of kinks or bends in the fault. This yielded lense-shaped deposits with economic potential because the greater mining thicknesses correspond to higher grade silver.
- 3) Tendency of hanging wall portions of veins to be better than footwall portions; in other words better silver and more siliceous toward the top side of the vein as opposed to less silver and more calcite in the basal portions. Also more pure vein matter to the top and more wall rock breccia clasts to the bottom.
- 4) Possible elevation control on the best grade mineralization and systematic variance of the optimal elevation along strike; the suggestion at the Commerce and Shamrock deposits being a 600-foot range in elevation is optimal and that the top of that zone outcrops near the Commerce shaft, is at the 200-level in the Shamrock shaft and the 600-level in the Hardy shaft (see figure 5).
- 5) Tendency for highest grade zones to form vertical ore shoots within the confines of the other parameters already defined (see figure 3).

These observations provide the key guidance to exploration for more vein-type ore bodies. But there is also the recognition that similar vein silver-silica deposits, particularly to the south in Mexico, have been traced downward

NW

SE

Longitudinal Section, Ash Peak Vein



From: Sage Assoc. Inc., July, 1976 Rept.

Note near vertical attitude of highest grade ore shoots. They plunge straight down dip at approximately 75° SW.

ORE GRADE

	> 10 oz Ag / ton
	6 - 10 " " / "
	< 6 " " / "

CANAMIN RESOURCES LTD. NORTH VANCOUVER, BRITISH COLUMBIA	
ASH PEAK MINE GREENLEE COUNTY, ARIZONA	
SHAMROCK-COMMERCE SHAFTS CONTOURED SILVER GRADE	
0 200 400 600 FEET	
Work by :	Map Grid :
Drawn by :	Date :
Scale : As shown	Figure No. :

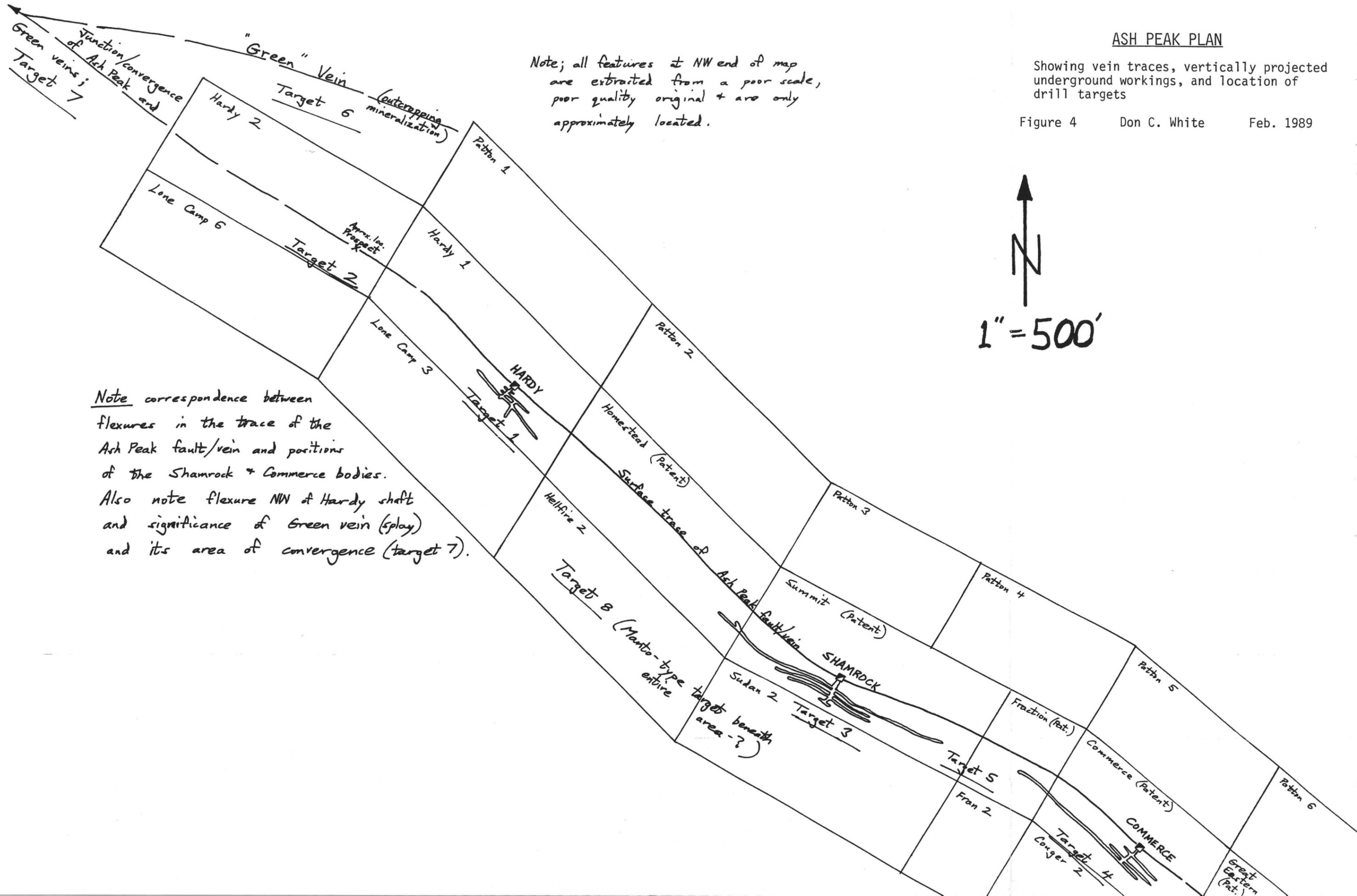
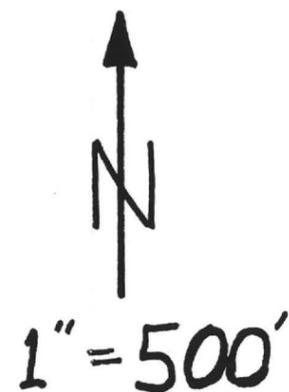
Figure No. 3 , to memo by Don White - Feb. 1989

ASH PEAK PLAN

Showing vein traces, vertically projected underground workings, and location of drill targets

Figure 4 Don C. White Feb. 1989

Note; all features at NW end of map are extracted from a poor scale, poor quality original + are only approximately located.

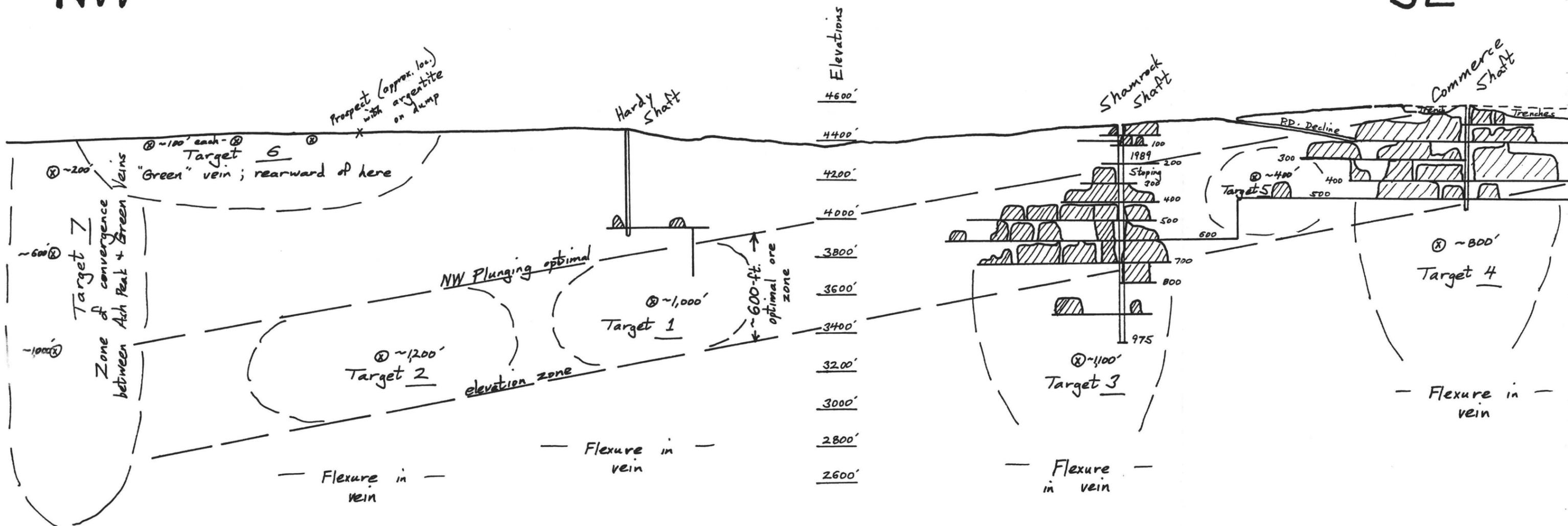


Note correspondence between flexures in the trace of the Ash Peak fault/vein and positions of the Shamrock + Commerce bodies. Also note flexure NW of Hardy shaft and significance of Green vein (splay) and its area of convergence (target 7).

NW

Longitudinal Section - Looking NE

SE



Target B = Manto-type Pb-Zn-Ag sulfide
 ≥ 1500' minimum potential at depth (merits of testing to be evaluated in course of vein-type target drilling).
 Prob. > 3,000' and, may be worth testing to ~ 8,000' if indications are strong & reliable.

1" = 500'

ASH PEAK LONGITUDINAL SECTION

Showing old stopes, major ore trends, and proposed drill targets

to major lead-zinc-silver deposits. Without much other evidence pro or con, it is our wish to at least determine whether conditions exist for such a deposit beneath the Ash Peak vein deposits. If so, this deeper, higher grade, sulfidic, manto-type deposit is to be tested too.

The principal targets

Having distilled all the available reports and data, the following are offered as the most likely sites of undiscovered mineralization. The numbers 1 through 8 correspond to the targets in plan (figure 4) and longitudinal section (figure 5). The numbers do not indicate a priority either of size, chances of success, or even drilling order. There are many obfuscating issues of drilling logistics, claim boundaries, and sequentially dependent information that are important.

<u>Number</u>	<u>Target</u>	<u>Drilling depth (ft)</u>
1	Hardy area beneath the 600 level	1,000
2	NW of Hardy, beneath the 800 level	1,200
3	Down dip from Shamrock	1,100
4	Down dip from Commerce	800
5	Between Shamrock and Commerce	400
6	Green vein, near surface	100
7	Intersection of Green and Ash Peak veins	100 - 1,000
8	Manto-type target at depth	3,000+ ?

Targets 1 through 5 are those with the best support data. They all lie within the best understood fault/vein system and within the present claim block. A number of holes could very usefully be drilled in each of them without any geologic overkill. However, a bare one hole cast at each of the initial five targets will still total about 5,000 feet. At \$25./ft all-inclusive contractors cost, that's \$125,000. One could only embark upon such a program if they realize that certain targets will require more drilling for convincing evidence.

Targets 6 and 7 are both very intriguing. They come from Sage and Associates' recommendations now 13 years old but still apparently never acted upon. The Green vein (target 6) has all the geochemical hallmarks of another Ash Peak vein, including Ag. It should be tested by a minimum of three 100-foot holes spaced along its trace.

Both the Green vein and the intersection of Green and Ash Peak veins (target 7) apparently lie beyond the NW boundary of the present Ash Peak Partner's claims. This needs to be checked out with the partners and in

the courthouse. Staking a few supplemental claims may be needed. In any case, target 7 may be a very good bet. Testing the vein intersection at various depths, say 100', 300', and 600', would be the minimum recommended.

Only with the vein-testing information in hand could one appraise the merits of the manto-type target (8). The vein testing proposed would be the deepest to date and likely the most thorough. It would probably yield critical information on stratigraphy, vertical continuity of structure and mineralization, and geometric information that must be combined to figure whether a manto target is plausible, and if so, where. A target in excess of 3,000 feet deep is quite to be expected.

Drill testing

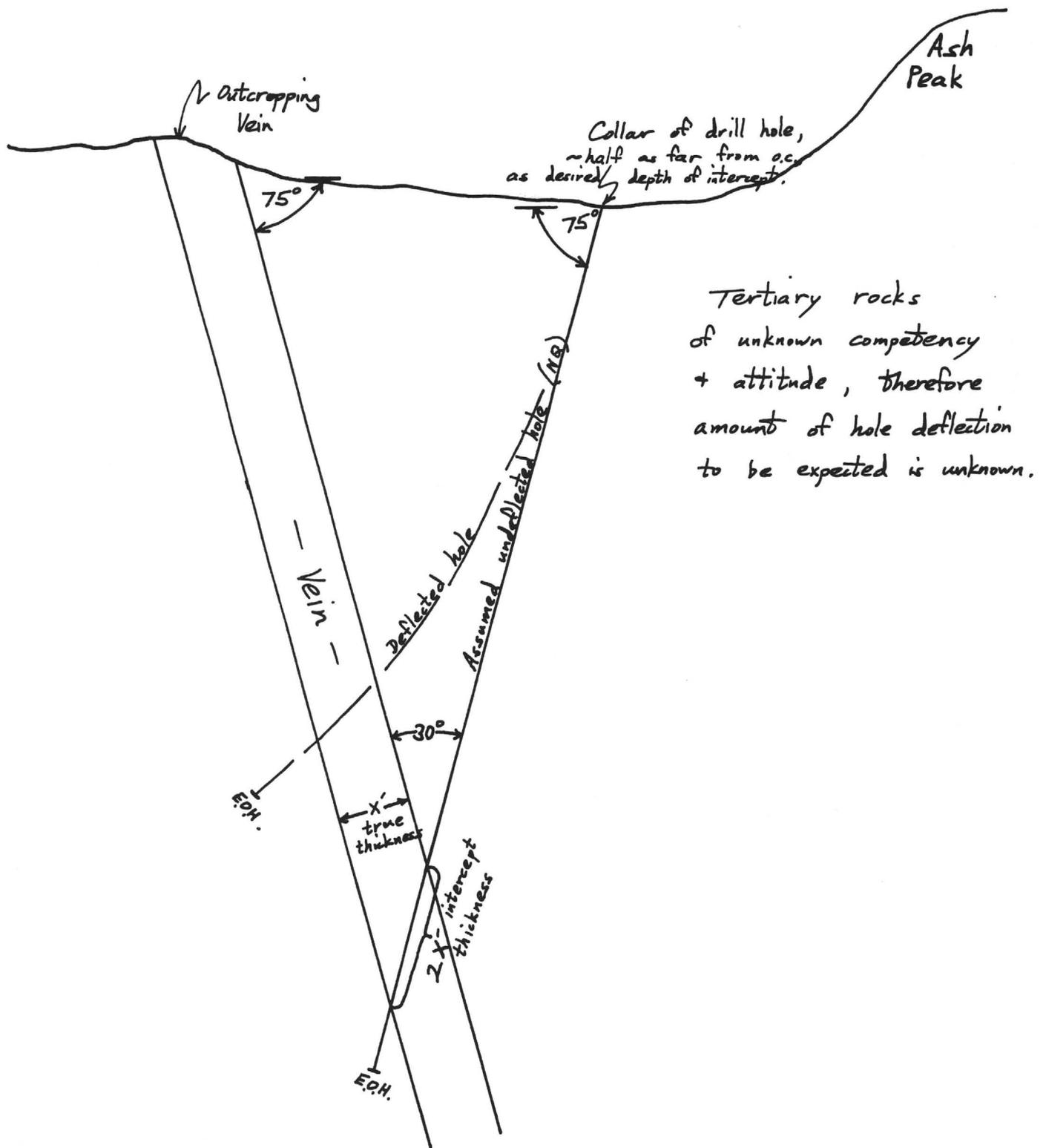
The proposed targets 1 through 7 all lie along steeply dipping faults/veins. Dips average about 75° to the southwest. For all but the shallowest holes, dips of about 75° for the drill string at the collar will be about right. If angled to the northeast and undeflected by the Tertiary stratigraphy, then an angle of intercept of 30° will be made with the vein (figure 6). This is good for it yields an intercept length twice that of the true thickness. At about \$25,000. per deep intercept, the more footage intercepted the better. More assayable footage means more statistical significance for the little hole in the huge target. The minimum core size recommended is NQ.

Of course hole deflections must be expected and must be well documented under these circumstances. The location and angle of intercept must be known very accurately. Thus it will be imperative to have available a down-the-hole survey instrument.

The shallower targets should be tested first so as to learn the drill deflection characteristics. These lessons can then be incorporated in the collar site and orientation selections for the deeper holes.

All the vagaries of drilling such long holes and getting good core return in the key intercepts demands a top notch driller. I have used all the majors for various clients but find none as reliable or as cost-competitive as S.D.S., newly relocated to Reno. They would be willing to work double shift, 10 days on, 4 days off, drilling NQ with their truck-mounted or skid-mounted rig. They routinely drill for a fixed, all-inclusive, cost. There are no extras for mobilization, bits, mud, moving, or anything! When all is said and done their rates are 10% to 50% less than Longyear, Boyles, or Joy. Their rates of advance would probably be about 80 to 100 feet per shift or 3,000 to 4,000 feet per month. Thus an initial one-hole test of targets 1 through 7 could be had in two months duration, and a manto-target hole may require a month of its own. The approximate cost of S.D.S. is \$25./ft.

As already mentioned, one hole into each of the initial five targets would require about 5,000 ft. drilling or \$125,000. direct drilling expenditure. Targets 6 and 7, if drilled beyond the present claim boundary, would be another



Ash Peak Mine
 Schematic, vertical drill section,
 looking SE, to show
 intercepts, deflections, etc.

1,500 feet or so or an additional \$40,000. Each hole expended on manto-target testing, at a guessed 3,000 ft. depth, would require about \$75,000.

To drilling costs must be added dozer costs for pads and drill roads, surveying, geologist, and some assays (though the on-site radiometric analyser will be utilized for most assays). All these costs are summarized:

COST SUMMARY

<u>Drilling</u>	All-inclusive contractor cost @ \$25./ft.	
	Initial 5 targets, one hole each, 5,000 ft.	\$125,000
	Targets 6 and 7, three holes each, 1,500 ft.	40,000
	Manto-target holes, each 3,000+ ft (?) or \$75,000 apiece	
	Drilling total for targets 1 through 7	<u>165,000</u>
<u>Cat Work</u>	Assumed 2 hr/hole @ \$50./hr	1,000
<u>Surveying</u> (surface)		1,000
<u>Down-hole surveying</u> (rental of instrument)		4,000
<u>Geologic supervision</u> (3 months @ \$5,000)		15,000
<u>Contingency</u> (@ about 8%)		<u>14,000</u>
	TOTAL for targets 1 through 7	About <u>\$200,000</u>

CONCLUSIONS The seven vein-type targets at Ash Peak could be drill tested in at least a first-pass fashion (a bare one hole each) within a couple months of double-shift drilling for about \$200,000. Each manto-target hole thereafter would probably cost \$75,000 to \$100,000.

DW:sk

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

March 7, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short ✓
A.F. BUDGE (MINING) LTD.
4301 N. 75th St.
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Accompanying are my statements for work on the Ash Peak and Vulture projects during February. They are summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
Ash Peak	\$1,470.00	\$329.89	\$1,799.89
Vulture	<u>210.00</u>	<u>85.14</u>	<u>295.14</u>
TOTALS	\$1,680.00	\$415.03	<u>\$2,095.03</u>

The Vulture efforts was merely a one-day orientation for Dave Thiede of Tellis Gold prior to his selection of sites for control sampling for soil gas to test whether the Vulture mineralization is amenable to their exploration technique. It will probably be late March at the soonest before we hear about those results.

Ron and I have agreed that I shall compile all the data pertinent to the Vulture fault extension target(s) by about the end of March. Such a package can then be studied by any outsider for another opinion on the merits or details of such a target. Such a review may well require field and office discussion on my part to familiarize the new party with the geology. I recommend Paul A. Lindberg as an excellent structural and economic geologist. He is very practical, and lives in Sedona, closest of any alternative candidates. I suspect he would be keen to study the Vulture if his work schedule will allow it. His detailed exploration focus is what is crucial and makes him more desirable than others with less economic and more regional outlooks.

Regarding Ash Peak, Ron informs me that the consensus is that no Shamrock or Commerce size/grade silver-silica flux bodies could be viable and hence ought not to be considered exploration targets. That leaves only the deep, high-grade, manto-type target as worthy of Budge's efforts. That target type was not addressed in my February 16 memo because it was presumed that the other targets would be tested first and they could materially contribute to our understanding of the manto potential. Jumping directly into the manto exploration will require some more study and planning.

Sincerely,


Don White
Geologist, C.P.G.

Enclosures

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

March 28, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
A.F. BUDGE (MINING) LTD.
4301 N. 75th Street
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Accompanying are my statements for work on the Ash Peak and Vulture programs during March. They are summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
Ash Peak	\$1,260.00	\$ 134.29	\$1,394.29
Vulture	<u>315.00</u>	<u>99.20</u>	<u>414.20</u>
TOTALS	\$1,575.00	\$ 233.49	<u>\$1,808.49</u>

My memos of March 20th and 21st summarized the status of Ash Peak drilling plans and permitting arrangements. We are now tentatively scheduled to commence drilling on Saturday, April 1st with S.D.S. of Reno as drill contractor. Thus we should be well along toward completion of hole B-1 (Budge Hole #1) before I have to leave for Massachusetts April 7th. Carole will arrange for John Norby or John McKenney to be on site by April 5th so that I may familiarize them with what to expect and how to determine the set-up of B-2. I should then be back by about April 18th to resume the Ash Peak duties and to get the Vulture geophysical work going.

Our meeting in Scottsdale March 14th with Joe Anzman, consulting geophysicist, resulted in the decision to try two test induced polarization (I.P.) lines at Vulture. A control line will be run between pits 3 and 4 using 100-ft. and 200-ft. dipole spacings. Then two lines about 600 feet apart will be run straddling the Vulture, extending about 1/2 mile N and 1 1/2 mile S of the Vulture. The control lines and four line-miles of survey, reading both resistivity and chargeability, will take at least a crew week at about \$1,200./crew day, plus expenses. These lines will test for siliceous (resistive) zones that would be quartz porphyry apophyses or quartz veins, and for sulfidic (chargeable) zones attributable to pyritization, as we see in the Vulture lode area.

Compilation of the Vulture fault extension data was planned for this week but the Ash Peak program was specified as priority. Ash Peak and other efforts will dominate April but I may be able to get back to Vulture matters late April or May. A lot will depend on how much Ash Peak drilling is done.

Best Regards,



Don White
Geologist

Enclosures

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

April 30, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
A.F. BUDGE (MINING) LTD.
4301 N. 75th Street
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Accompanying are my statements for work on your behalf during April, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
Ash Peak	\$2,100.00	\$ 793.05	\$2,893.05
Vulture	1,470.00	266.56	1,736.56
Dos Cabezas	<u>210.00</u>	<u>112.29</u>	<u>322.29</u>
TOTALS	\$3,780.00	\$1,171.90	<u>\$4,951.90</u>

The Ash Peak drilling was just commenced while I was on site. I was able to expedite BLM and DWR permitting to one week compared to the normal 4-6 weeks, for which no allowance had been made in the deal with Ash Peak Partners and Canamin. I have heard about the B-1 intercept and B-2 hole plans only second hand. I'm concerned about the lack of continuity on the project. John McKenney being the third geologist in as many weeks can not be too good for the program. I am concerned that work I would do to allow proper interpretation of the deep intercepts is not being done. I hope that I may be personally involved again in May in order to insure that my studies and knowledge of the stratigraphy, structure, and geochemistry are not wasted. Spending money on drilling will fulfill work commitments but organized geologic study will be necessary to make a discovery.

While enroute to Ash Peak the end of last month, I visited Dos Cabezas mine, a submittal by Queenstake Resources. My memo of April 2 summarized observations there and why I feel it does not justify any expenditures by Budge.

The Vulture induced polarization survey is well along. An orientation line across the known lode between pits 3 and 4 yielded both resistivity and chargeability anomalies with a 100-foot dipole array. The same line surveyed with a 200-foot dipole revealed only subtle anomalies. The longer spacing is necessary, however, for deeper penetration beneath cover in the unexplored areas. But the orientation work teaches that even subtle anomalies must be considered targets and tested. Two anomalies are already known north of Vulture and lines are being run now to the south of Vulture.

A.F. Budge, C.A. O'Brien, R.R. Short
April 30, 1989
Page Two

The targets to the north are in areas of outcrop and ought to be mapped in detail this fall, along with geochemical sampling, prior to drill testing near year end.

I shall be away May 3 through 8 to my sister's wedding in Topeka, Kansas. I may be reached there at the Lincoln Inn (913-233-4200) in case any discussions of I.P. followup is helpful.

Also accompanying is my brief memo on the results of fluid inclusion and geochronologic studies by others on the Vulture.

And, finally attached is my write-up of a proposal to explore the United Verde mine property for zinc and gold. I have a budget worked out starting with about \$10,000. for land acquisition (J.V. negotiation with P.D.), \$30,000. for data review, an initial \$150,000. U.G. access and testing phase and a one-year \$1-2 million U.G. drill-testing and tunnelling phase. The total program would cost \$1½-2½ million over 1½ years, culminating in a preliminary reserve calculation and tentative underground development plan. Capital costs for a mill for the zinc ore would be many millions of dollars.

I have the word from Ron that this is not on Budge's wish-list as far as target types and that there are no plans to re-attempt dealing with P.D. What I wish to have is a written confirmation of that negative interest so that I may proceed with submitting the ideas to others. Please let me know by the end of May or I shall take no response to mean no interest.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

STATEMENT FOR GEOLOGICAL SERVICES

CLIENT: A.F. Budge (Mining) Ltd.
 PROJECT: Ash Peak
 PERIOD: April, 1989

Don White
 521 East Willis St.
 Prescott, AZ 86301
 602-778-3140

DATE	DAYS	MILES	LODGING	FOOD	OTHER	DESCRIPTION	ACTIVITY
March 29	3/4	4					Files for sub. ed. / organizing all Ash Peak files / Core splitter + log survey int.
3-30-89	1 1/4	213	(Pos Cabezas)				BLM claim checking - D.H. survey instr. at the airport Drive to Willcox for Pos Cabezas environment for Peak. (7am-7pm)
3-31	1/2	67		23.00			Initial hole spotted. BLM clearance meeting. Access for weekend. Arrangements for A.P.P. (12pm-8pm)
4-1	1	98		23.	4.92	Duplicate keys (4) to Ash Peak	Water for drilling (plumbing connections) Power arranged for other holes + access.
4-2	1	67	245.33	27.	Incl lunch for drillers		Waiting for drillers, leading came to site Initial line-up & set up.
4-3	1/4	134	(incl. phone)	22.			Rigging up. Water problem resolutions. Colored hole, trip to town for 2nd crew, etc. (7am-7pm)
4-4	1/4	67		12.			Drilling, logging, recon. to Ash Peak, familiarizing J. Norby with geology + people (8am-8pm)
4-5	1/4	69		14.			Enroll BLM, hole survey, U.G. trip for John Norby, supplies for project to John (8am-6pm)
4-6	1	271		12.	14.80	Photos; film + developing	Return to Prescott, calls re: parts, coordination schedule.
4-17	1/4	—			~6.00	Squeeze bottles of 10% HCl into for John + John	Calls to Gene, John, Ron re: results + schedule for 2nd hole, etc.
4-30	1/2	—			~92.00	April phone billing provided	Monthly billing / memo, etc.
TOTAL	10	990					
RATE	210.	.30					
\$	2,100.	297.00	245.33	133.00	117.72	\$ 793.05 Total Expenses	

TOTAL BILL: \$ 2,893.05

Don White
 Geologist, CPG

United Verde Exploration Proposal

(A draft by Don C. White - February, 1989)

- Site: United Verde Mine, Jerome, Yavapai Co., Arizona
- Owner: Phelps Dodge Corp., with whom a lease or J.V. would have to be arranged
- Commodities: Zinc, gold, copper, silica
- Target types: Sphalerite-rich middle of a prominently zoned volcanogenic massive sulfide system; also its auriferous silica exhalite capping, and possible footwall copper zones missed by former mining.
- Potential: 5 to 20 million tons of zinc reserves in the 6 to 10% Zn range or smaller bodies (individually up to 1 mil. tons) of higher grade zinc. Zinc reserves would be accompanied by about 0.5% Cu, 0.6 oz/t Ag and 0.02 oz/t Au. 0.5 to 3.0 million tons of gold reserves in the 0.1 to 0.5 oz/t Au range or smaller bodies (individually up to 200,000 tons) averaging 0.4 oz/t or better. Gold reserves would be siliceous and suitable as smelter flux and would carry 1.0 to 20. oz/t Ag.
- Possibly some 3% to 6% copper reserves up to a few million tons and accompanied by about 2. oz/t Ag and 0.03 oz/t Au.
- Discussion: The United Verde (U.V.) Mine has a production history of over 33 million tons grading 10% down to 3% Cu through the 60+ year life of operations. It has been shut down since 1953 except for cleanup of the open pit.
- The U.V. is recognized as a Proterozoic volcanogenic base-metal sulfide deposit of a particularly large size. It probably contains 180-200 million tons of massive sulfide. It is prominently zoned from a copper-rich footwall, the area of all historical production, through a pyrite-rich zone to a relatively untouched zinc zone, all capped by an auriferous silica exhalite. It is the zinc and siliceous gold zones that offer the best opportunities for renewed mining.
- A similar exploration program has recently been conducted at the United Verde Extension deposit about 1/2 mile to the east. There the zinc zone does not exist (it is documented at the U.V.) but the siliceous zone has been found to harbor an economic gold and silver reserve. Production there is now averaging 0.3 oz/t Au and 5.0 oz/t Ag as direct-shipping, silica smelter flux. A lower grade zone totals about 0.5 million tons. The U.V. massive sulfide body is more than ten times the size of the U.V.X. and the silica zone to be explored is proportionately larger as well. It contains documented gold mineralization.

Development already in place: The U.V. main haulage known as the Hopewell or 1,000-level tunnel is still open. It is 9,000 feet long, 9 feet high and 13 feet wide. It could be converted to rubber tire haulage. Also open is the No. 7 shaft, concrete lined to the 3,000 level. Furthermore, some gold and perhaps even zinc reserves may be identified above the 630 level which is the ramp-accessible bottom of the open pit. Certainly some drilling could take place from the open pit without having to rehabilitate any underground.

Known problems: The U.V. is flooded with water to the 1,000 level where it runs out the haulage tunnel. Most of the zinc reserves are reportedly between there and the 2,000 level. Dewatering would be necessary for detailed exploration or zinc production but could wait till data review and surface or underground drilling from above the 1,000 level gives justification to such an effort.

The earlier footwall copper mining coupled with mine fires in the massive sulfides have locally created engineering difficulties. Subsidence toward footwall stopes or into burned zones will have to be coped with in the zinc zone. The silica-gold zone is probably very little affected.

The zinc reserves are known to be very marmatitic (Fe-rich) and fine grained. Adequate liberation for concentrating purposes will require very fine grinding.

None of these problems are seen as "fatal flaws." Rather, they are up-front, known problems that will have to be solved or worked around.

Negotiations necessary: The U.V. is owned 100% by Phelps Dodge Corp. They have done virtually nothing with it or the tens of square miles of adjacent patented and unpatented claims they control since the U.V.'s closure over thirty years ago. The P.D. management seems reticent, if not loath, to even consider farming out this property they apparently covet but do nothing with. One precedent is known, however.

In 1982 Billiton Exploration, U.S.A, was able to extract a commitment from P.D. to share up to 50% interest in the U.V. alone (not the district in general). It is rumored that Boliden may have obtained a similar commitment a year earlier. In both cases, the problems already identified were sufficient to thwart progress, given the then prevailing metal prices. Also, their interests were exclusively zinc. The recent zinc price increases, copper price strength, and recognition of major gold targets forces a reappraisal. Careful and diplomatic though persistent and persuasive efforts will be needed to extract a reasonable deal from Phelps Dodge.

Summary: The huge United Verde massive sulfide deposit at Jerome, Arizona still harbors zinc and gold reserves. Their large size and/or local high grade deserve immediate attention. Though controlled by Phelps Dodge, there is reason to believe a 50% earn-in joint venture is possible.

Engineering and metallurgical difficulties already recognized are believed surmountable. Thousands of feet of underground development already in place are a major asset. The voluminous old files and surface drilling and/or underground drilling above the 1,000 level (water table) would serve to test the targets. Smaller targets may even be identified above the 630 level and be accessible from the present open pit.

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

November 25, 1988

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short ✓
A.F. BUDGE (MINING) LTD.
4301 N. 75th St.
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Enclosed are my November statements for work on six separate projects, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
Minneapolis vein/ Oatman	\$ 950.00	\$298.82	\$1,248.82
Ash Peak Ag	649.60	132.33	781.93
Eddie Basha submittal	570.00	24.25	594.25
R. Coblio submittal	380.00	64.35	444.35
U.V.X.	380.00	58.70	438.70
Golden Turkey	<u>190.00</u>	<u>6.40</u>	<u>196.40</u>
TOTALS	\$3,119.60	\$584.85	<u>\$3,704.45</u>

I've sent each of you, in the last couple weeks, memos on the Ash Peak silver/silica flux property, the Rackensack property (submittal by Robert Coblio) and the Penny Rich discovery (adjacent to the Golden Turkey tailings). Accompanying is my latest memo on the opportunities checked in Oatman. The tailings there deserve a more serious investigation.

I hope that the Ash Peak property gets a fair analysis. Calculations of financial viability vased on various scenarios should be worked through. I can't help but feel that a million tons of 8 oz/t Ag, saleable as flux to nearby smelters, should be attractive. And there's opportunity for more. A long shot is a very large tonnage replacement lead-zinc-silver deposit at depth too. The silica vein now being worked may be just the tip of the iceberg. It needs to be explored.

I've had almost no time to be in Jerome and thus only a portion of one day with John McKenney this month. All his work needs to be brought current. We intend to decide my mid-December how best to present the latest development work. Certainly 1"=20' plans and sections with geology and assays will be a must. John is to update surveying, geologic mapping, and assay compilations.

A.F. Budge, C.A. O'Brien, R.R. Short
November 25, 1988
Page Two

I'll be at the Northwest Mining Association's convention in Spokane, Washington Nov. 29 - Dec. 4, including presentation of a talk on the U.V.X. Nov. 30th. A copy of the manuscript, already approved by Paul Handverger for Verde and Carole for Budge, will be sent to you as soon as I have the graphics completed.

Ron has requested a writeup of the exploration proposals for "other Vultures" and for the Vulture fault extension. I shall compile a memo on the premises, target characteristics, exploration techniques, costs, schedules, and land considerations, for your review.

Sincerely,

A handwritten signature in black ink, appearing to read "Don", written in a cursive style.

Don White
Geologist, C.P.G.

DW:sk

Enclosures

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

January 31, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short ✓
A.F. BUDGE (MINING) LTD.
4301 N. 75th St.
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Accompanying are my January statements for a minimal amount of work on three projects, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
Ash Peak	\$380.00	\$ 76.26	\$456.26
Vulture	285.00	64.35	349.35
U.V.X.	<u>142.50</u>	<u>21.60</u>	<u>164.10</u>
TOTALS	\$807.50	\$162.21	<u>\$969.71</u>

I'll be meeting Dave Thiede of Tellis Gold at the Vulture on February 1st in order to orient him to the geology and assist in the layout of a sampling scheme for their soil gas survey over a control area.

As to the Vulture placer testing, I heartily recommend a continuous trench sampling program with the entire contents of the appropriate pediment horizons run through the recovery plant (i.e., trommelled, screnned, washed, panned, and gold recovered and concentrate saved for analysis). Anything less, such as the spotty backhoe trenches and hand-cut channel samples will be too small a program for any validity. The reason for this is the intrinsic variability of eluvial placers. Rather than relatively predictable or consistent alluvial gold placers as occur in humid areas with well developed drainages, the scarp slope of Vulture Ridge shed its gold very erratically on to a desert plain subject to flash floods. This yielded a poorly sorted, very spotty, juvenile placer gold deposit that wouldn't normally be economic except that it derived from such bonanza grade outcrops. Large samples and continuous trenching ringing the old scarp slope will tell whether it is worth Budge's recovery.

I recommend about a thousand feet of backhoe trench from SE of pit 1 to SW of pit 4. If the basal 3 feet (to bedrock surface) of the trench (assumed 3 ft. wide) is all processed, then we are looking at about 350 cubic yards which we may like to run as about five separate "samples." The equipment Ron reports available with a capacity of 15 yd³/hr sounds about right in terms of capacity. It ought to be able to handle one "sample" per day, including cleanup of gold. It must, however, be set up to handle the hard caliche which must be disintegrated for adequate gold liberation.

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
January 31, 1989
Page Two

I shall try to have the Ash Peak drilling plan (possibly excepting the Manto target) worked out by mid-February unless the Vulture placer testing is scheduled before then.

Ron has asked that I not make any visits at U.V.X. at Budge's expense unless requested.

Tony, I understand you'll be attending some portion of the SME Annual Meeting in Las Vegas at the end of the month. I look forward to seeing you there.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

Don White
521 East Willis St.
Prescott, AZ 86301
778-3140

July 17, 1987

Dick Boyle
Estimator
Arizona Public Service Co.
1250 East Hwy 89-A
Cottonwood, AZ 86326

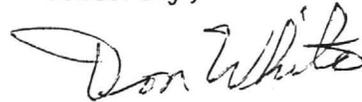
Dear Mr. Boyle,

I am the geologist you met with a week or more ago at the U.V.X. Mine site near the state museum in Jerome. At that time we agreed upon a tentative plan to relocate the power poles now in the parking lot, and near Budge Mining Ltd.'s gates, to some more suitable sites. Our understanding is that you need to replace the poles anyway because of age and thus there should be no charge to the owners of the land where the poles are (Verde Exploration Ltd.), the lessees of that land (Budge Mining Ltd.) or the power consumers on that line (various parties).

Your concern was the need for new easements because of the line relocation. That should be no problem with the sites you and I talked about with respect to shifting the two poles now in the parking lot and mine yard over to the north side of the mine road. Budge as lessee would like to see that since the poles will then be well away from gates, truck turnarounds, parking areas, and possible plant equipment sites. Verde Exploration as lessor is certain to approve any reasonable relocation easement as it is necessitated by both aging poles and new needs of space where those poles now reside. Paul A. Handverger of Verde Exploration Ltd. will be back from Alaska by September or so to formalize that.

Don't hesitate to be in touch if I can be of any further help.

Sincerely,



Don White
Geologist, C.P.G.

cc: Paul A. Handverger, Verde Exploration Ltd.
Carole A. O'Brien, A.F. Budge (Mining) Ltd. ✓

Carole

Don White
521 E. Willis St.
Prescott, AZ 86301

March 31, 1988

Robert W. Hodder
20 Mayfair Dr.
London, Ontario
CANADA N6A 2M6

Dear Bob,

Accompanying are some items of possible interest to you and perhaps of assistance to Ian Sloan. The articles are interesting ones on gold geochemistry and its mobilization both in biogenic and soil weathering (lateritic) environments, sort of complements to the James Franklin SEG talk and the Boddington paper, respectively.

The letter from Tom Nash is surely of interest to Ian. The conjectural "sheared, silicified, tuff" for the silica grit is not a surprise but a curious comment after speculating the same thing megascopically. Has Ian seen any evidence of quartz after carbonates and/or sulfates as Tom Nash suggests? And the conclusion that "chert" may only apply to a select few clasts is also supported by Tom. Indeed, the password is now merely "silica."

Drilling from the 907 D.D.S. has not been terribly productive. The ample silica grit there is only little mineralized and, where mineralized, quite ferruginous. I have drill sections done (revised post survey corrections) for 902, 907 and 911 areas and will compile normal sections for those areas too. They are the new areas we'll focus reserve calculation efforts on when you're here. Then, perhaps by late May we may get back to reassess the Morgan and 809 areas after I have reworked plans and sections there.

Would you please bring back the 34 809/806-series pulps that Ian borrowed in December. If he has continued use for them perhaps he could take splits. I am making selections for multi-element analyses and may need some of those.

The enclosed drill section, 911-230° is for Ian's use; I'll have updated copies for you when you arrive. It may help Ian to place the 911-3/4 samples sent last month. It sure appears that the Verde Fault is channelizing fluids which are silicifying the fault zone and that the "beige-banded" silica dominates those healed structural features like the Verde and Florencia Faults. We can talk about that when you're here.

Cheers,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

cc: Carole A. O'Brien

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

July 31, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
A.F. BUDGE (MINING) LTD.
4301 N. 75th Street
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Accompanying is my statement for locating and organizing some base maps for John McKenny at U.V.X. I gather that he'll be compiling geology at 1"=20' for areas where mining may well teach us something about the gold occurrences that can help find more. Indeed I continue to develop ideas on that and believe there are a number of areas that deserve detailed geologic appraisal. Such studies can best be done in tandem with review of the mined out 902 area and information gained there as well as new understanding from the 809-9 area (alias 900 stope). Such studies would be of incidental cost compared to the value of even one more small body worth mining. But such undertakings are not just a day or two of dabbling.

I could foresee about one man-week reviewing John's geologic mapping and doing some of my own, one week wrapping up the 911- area maps and sections that you put on indefinite hold last year, and a few days to synthesize proposals. Such work could lead to some more underground diamond drilling or perhaps direct tunnelling and long-holing.

I feel strongly that as long as you've come this far at the U.V.X. it is in your best interest to complete the job. I believe my 80% finished work on the 911-area is crucial to that end, as is review of what should come out of the mining to date.

If you agree, allow me to spend about three man-weeks over the next couple months and I believe it'll be time well spent.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

M E M O

TO: Ron Short, Carole O'Brien, Anthony Budge
cc: R.W. Hodder

FROM: Don White

DATE: July 18, 1988

SUBJECT: Copper Chief precious metal content

Further to our Verde-district reconnaissance memo (Hodder and White, June 29, 1988), I have come across Copper Chief analytical data in 1922 smelter laboratory reports (Clemenceau/U.V.X. smelter). They are attached.

The figures bear out our supposition that very desirable precious metal grades may occur in material spanning the range from "copper-silica ore" through Gold-Stope-like "gold-only ore." The Copper Chief material has historically been viewed, like the U.V.X. silica zone, as a true gossan after sulfide. The numbers do not necessarily bear that out and it may well represent as much transported supergene enrichment rather than strict in-situ leaching and residual enrichment. Either way, what was shipped to the UVX smelter in 1922 was .75 oz/t Au, 20. oz/t Ag, or better than \$400./s.t. rock at today's prices. And that was open pit!

It's that sort of target which Bob and I believe may be hidden by the Paleozoic and Tertiary cover along and east of the Verde fault zone. Of course the low grade halos, if open pitable, are attractive targets as well.

DW:sk

Copper Chief Data from U.V.X. Smetter
Lab Reports 1922.

Date + Notes	oz/t		Percent					
	Au	Ag	Cu	Iron	SiO ₂	Al ₂ O ₃	Fe	S
5-1-22 H.S. *	0.86	37.60	1.3	31.3			29.1	1.1
7-19-22 Bett Sample	0.75	20.00	1.5	49.1			18.4	1.3
7-20-22 Lot # 430	0.75	21.25	1.8	49.0	44.0	4.6	18.1	1.3
7-25-22 Car 12552 Grab	0.70	24.00	1.7	43.1			20.0	1.6
" " 12521 Grab	0.70	24.10	1.8	44.6			19.6	1.5
7-26-22 Lot # 455	0.62	22.00	1.8	44.2	40.1	4.0	19.8	1.4
7-27-22 Repeat Car 12552	0.76	25.40						
" " Car 12521	0.76	24.30						
" " Lot 455	0.66	20.10						

* H.S. $\hat{=}$ hand sample - ?

Don White
July, 1988

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

July 30, 1988

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
A.F. BUDGE (MINING) LTD.
4301 North 75th St.
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Enclosed are my July statements for work on the U.V.X. and Vulture projects and the Silver Queen submittal, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
U.V.X.	\$1,757.50	\$207.80	\$1,965.30
Vulture	1,187.50	183.78	1,371.28
Silver Queen	<u>380.00</u>	<u>50.50</u>	<u>430.50</u>
TOTALS	\$3,325.00	\$442.08	<u>\$3,767.08</u>

Thus my total bill for July, 1988 is \$3,767.08.

July has allowed just what was predicted in my letter of a month ago. The Silver Queen submittal has been visited, sampled and reported in my memo of July 21st. The Vulture tailings reserves have been plotted, calculated and reported (memo of July 8th) and subsequently staked out on the ground. At the time of picketing the .020 grade boundary, some additional tailings were revealed as reported in my memo of July 21st. Assays will be in on the new area soon.

At the U.V.X. the 993 X-cut was taken about 50 feet WSW from the 907 D.D.S. and has been quit there now. It encountered gold and silver grades very close to those predicted from drilling slightly up-dip. That bodes well for the accuracy of our reserve calculations. The 993 was quit for now because of an extensive (at least 30 ft. wide and long by 1-2 ft. high) open cave at the face and beyond. The cave opening is nearly horizontal and almost certainly attributed to subsidence into the copper silica stopes within the Verde Fault zone just a few mine floors below.

The 902-3 Raise is in to a height of some 25-28 ft. and cross-connected to a manway raise (902-3-M). Both those raises leave the 950 level 902-W drift in beige-banded silica and both top out in the odd marginal facies of purple and red and yellow, gritty silica with lean Au and Ag but very

A.F. Budge
C.A. O'Brien
R.R. Short
July 30, 1988
Page 2

strong Hg, As, Bi, Cu, Pb, Zn, and about 45% Fe! I have tried to get that material segregated for it may have its own market. The lithologies there are just as predicted from drilling and I expect the assays will be too though they are not in yet. The grades in the planned sublevel X-cut west from the 902-3R will be about .20 Au (eq) or slightly better. Those grades will increase with height and to the south.

Accompanying are the latest U.V.X. plan compilations for the Central Verde Area (Morgan area, including 902 and 907) which also includes the 905-S area. They are seven plans; 1100, 950, 903, 800, 700, 600, and 550 levels with the bulk of the activity on the 950 and the core of the mineralized body around the 903.

The Bondar-Clegg geochemical data in in for the 809 area and has been partially compiled. Perhaps by the end of August I shall have that plotted and interpreted. I will be away on a vacation (my first in four years!) for two weeks August 10th-24th. If anyone needs to reach me, they may at 617-548-3043 (Woods Hole, Massachusetts).

August plans, aside from vacation, include the first week on the Aztec tailings sampling program and the last week of August compiling that data and others from the U.V.X. Immediately before and after my two weeks away I shall visit U.V.X. underground to make sure sampling is up to date and that Pete and crews know what to expect.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

P.S. The U.V.X. Morgan area plans I planned to enclose with this letter and told Ron he'd have early August can not be wrapped up because of the rescheduled week-long trip to the Aztec property in Nevada. They are virtually done but need a few more items and drafting, blueprinting and coloring. For seven plans, several copies of each, that will take most of a week and can't be done till after my vacation. Even then, the Aztec data and new Vulture data will have priority, so we're talking into September. That should not be any inconvenience since all the data necessary for working on the 950 level and the 950 +25' sublevel has already been provided.

STATEMENT FOR GEOLOGICAL SERVICES

CLIENT: A.F. Budge (Mining) Ltd.
 PROJECT: Vulture
 PERIOD: July, 1988

Don White

521 East Willis St.
 Prescott, AZ 86301
 602-778-3140

DATE	DAYS	MILES	LODGING	FOOD	OTHER	DESCRIPTION	ACTIVITY
July 4	1/2	—					Plotting Vulture data + contouring
7-5-88	1	4					Reserve calculations on stamp mill tailings
7-6	1/4	—					" " + chart/table compilation
7-7	1	4					(9am-Midnight) Finalizing grade contour + isograph + reserve block plans
7-8	1/2	4			20.00	Typing + map coloring	Typing, coloring, dupli. + posting, - Reserve memo.
7-18	1/2	4			21.38	Pickets for staking .020	Purchasing pickets + painting same
7-19	1/2	—			6.78	Paint for pickets	X-Sections to determine .015/.020 boundaries
7-20	3/4	98	39.00	11.00			(2pm-9pm) Staking .020 grade boundary +
7-21	1	107		9.00			angering newly recognized tails
7-22	1/4	18			4.92	Postage	(6am-4pm) Tails angering + sampling, Samples to assayer; memo + typing, dupli., etc.
TOTAL	6 1/4	239					
RATE	190.	.30					
\$	1,187.50	71.70	39.00	20.00	53.08	\$ 183.78	Total Expenses

TOTAL BILL: \$ 1,371.28

Don White
 Geologist, CPG

Ron/WX

Don White
521 E. Willis St.
Prescott, AZ 86301
602/778-3140

DATE: July 26, 1988

Robert Crook
IRON KING ASSAY, INC.
P.O. Box 56
Humboldt, AZ 86329
(632-7410)

UVX Batch # 131

Hello Bob and Kati;

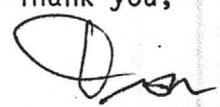
Accompanying are six (6) samples for one assay ton gold and silver fire assay with AA followup as appropriate. The samples are numbered:

- 1 902-3M-1
- 2 902-3M-2
- 3 902-3M-3
- 4 902-3R - Composite
- 5 890-1
- 6 890-2

Please save all pulps and rejects for my pickup. Please send a copy of the results and billing to Carole (below).

cc: Carole A. O'Brien
A.F. BUDGE (MINING) LTD.
4301 N. 75th St., Suite 101
Scottsdale, AZ 85251

Thank you,



Don White
Geologist, C.P.G.

Ron Short

Don White
521 East Willis St.
Prescott, AZ 86301
778-3140

July 22nd, 1988

Robert Crook
Iron King Assay, Inc.
Humboldt, AZ 86329

Hello Bob,

Total of 21 samples accompanying for
gold only fire assay / AA finish (one assay ton).

They are numbered:

1	T-135	φ-3	11	T-141	4-6
2	T-135	3-4	12	T-142	φ-2
3	T-136	φ-2	13	T-143	φ-1
4	T-137	φ-2	14	T-143	1-3
5	T-138	φ-3	15	T-144	φ-3
6	T-139	φ-2	16	ST-1	φ-2
7	T-140	φ-3	17	ST-2	φ-3
8	T-140	3-4	18	ST-3	φ-2
9	T-141	φ-1	19	VR-1	
10	T-141	1-4	20	VR-2	
			21	VR-3	

Please save all pulps + rejects for my pickup
Please send a copy of the results & billing to:

Carole A. O'Brien
A.F. Budge (Mining) Ltd.
4301 North 75th St.
Suite 101
Scottsdale, AZ 85251

Thankyou,

Don White
Geologist, CPG.

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

July 29, 1988

Holly Huyck
Asst. Prof. - Dept. of Geology - ML13
Univ. of Cincinnati
Cincinnati, OH 45221

Dear Holly,

I am in receipt of your XRD, SEM, and EDAX data and interpretation of July 24th. Thank you for all your efforts to date, and for Tiebing's heavy involvement in the issue. Without both your interests in this study our budget for this sort of thing would go virtually nowhere. It sounds as though you're now somewhat intellectually hooked on the surprising findings and can perhaps quantify and elucidate a little more. The \$500.00 provided is likely the limit for this study and so watch, as I know you are, that you don't get in a hole. Your digression is the best in how the remainder is distributed between the further studies you've suggested.

I see merits in each of the following items I have from your letter:

- 1) Translation of XRD peak heights to absolute values by use of standards.
- 2) Further SEM work at Univ. of Cincinnati.
- 3) Polished thin section/microprobe mounts and study.
- 4) Utilization of microprobe scanning capability through your contact at U. of T., Austin.

Certainly I would be mightily impressed if all that can be done with the budget!

Whichever studies are most likely to yield evidence of the relative roles of supergene versus hypogene versus metasomatic gold/silver emplacement should receive the emphasis.

Thanks for your intended correction of my Ag/Au ratio plot (infinity versus zero issue). What has thrown you off is the scale of the Ag and Au plots. Ag is 20 ounces to the inch, Au 0.5 ounces to the inch. Thus the fractions of an ounce Ag (0.2 to 0.8) look like zero while the third decimal place for Au values (<.001 to .005) are still visible plots (but probably shouldn't be even a pencil lead high). So the Ag/Au is say .5/<.001 or infinity.

Holly Huyck
July 29, 1988
Page Two

I hope your trip to Oklahoma was interesting and fruitful. I shall be out of touch Aug. 1-7 and Aug. 10-24 but mainly in Prescott thereafter. I'll look forward to any further information you and Tiebing can learn sometime in September from the sounds of it.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

cc: Carole A. O'Brien
Robert W. Hodder

P.S. Any original photos (negatives--?) or graphic plots you can save and provide us when done would be very useful for conveying this information to the client or any other researchers.

cc. Ron/uvx.

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

July 15, 1988

Holly Huyck
Asst. Prof. - Dept. of Geology
547 Geology/Physics Bldg.
Univ. of Cincinnati
Cincinnati, OH 45221

Dear Holly,

As promised, I shall attempt to answer your questions posed in your June 21, 1988 letter regarding the U.V.X. silica breccias.

To take them in order:

- 1,2,3) Sorry we have you confused between "banded" and "beige-banded". The former can apply to any silica with parallel coloration patterns. It typically does occur within clasts in the cores of silica bodies and may be the closest thing to "chert" of hypogene hydrothermal origin. Beige-banded, however, very likely represents the hornfelsed margin of the diorite "sill" or "subvolcanic dome." There are no dates on the diorite or its wall rock at the U.V.X., but all the geometric evidence suggests a diorite body wedged its way into the pre-existing silica (chert - ?) stratigraphy, splitting into multiple wedge-like prongs as it advanced. The silica immediately adjacent to the diorite, virtually without fail, is "beige-banded" and/or "purple-gray-massive", both variations of the "hornfelsed". The thickness of the hornfelsed zone can vary, probably as a function of the pluton's local temperature, rate of intrusion, rate of cooling, etc. The hornfelsed silica generally exhibits the breccia characteristics of unhornfelsed silica breccia but is so well silica healed that those features are not so obvious as the superimposed contact metasomatic features.

Subsequent to diorite emplacement and hornfelsing of adjacent silica, some fracturing and silicification activity took place. We know this by the shattered beige-banded occurrences, even to the point of matrix supported beige banded clasts, generally in a red-brown, very hematite rich silica matrix. This lithology appears preferentially along the Verde Fault, hence the suspicion of tectonic shattering and supergene silicification.

Don't be confused by beige-banded silica, solid or as clasts, occurring in seemingly odd places in a drillhole or section or plan. The three dimensional geometric complexity of the diorite is such that beige-banded silica at any given point simply indicates that diorite is not far away, up, down, fore, aft or to either side.

- 4) Hypogene, metasomatic, or supergene? We don't know but we suspect all the above in varying proportions for any given component at

any specific level of the stratigraphy. In other words, hypogene base metal sulfides, hypogene silica, possible hypogene base metal oxides and iron oxides, and primary gold (protore). This was likely followed by metasomatic silica and iron, accompanied by mobilization of precious metals out of what is now beige-banded silica, into cores of silica bodies virtually floating as huge xenoliths in diorite. Then, late Precambrian through the present, all was fortuitously located in elevation to collect supergene base metal sulfides, oxides, carbonates, iron oxides and carbonates, and precious metals from the weathering of the up-slope United Verde deposit, all transported by meteoric waters down along the Verde Fault zone. We have some oxygen isotope work commenced through R.W. Hodder at U.W.O. (memo accompanying). While it may provide some definition, it may all be ambiguous too. We'll let you know as that develops.

- 5) Present thinking is that the only true gossan developed in place is that from the 1100 level to 1250 level, over the main orebody. Much of the other so-called gossan may be in large part look-alike dropped out by meteoric waters rich in U.V. constituents. We see chalcocite as coatings on many cobbles even in the Tertiary conglomerate. It's interpreted as supergene sulfide, just as the abundant azurite and malachite and hematite and siderite are thought to be supergene oxides and carbonates. Previous references to copper-silica ore, as primary even in my own works as recently as a year ago, are now suspect. That too may be supergene.
- 6) Cu, Pb, and Mn data? Yes, for one hole only, we have those elements. I have plotted histograms for Au, Ag, Ag/Au, Cu, Pb, Zn, Cu+Pb+Zn, Fe, Hg, As, Sb, Se, Bi, Ni, Cr, and Mn for a critical stretch of hole M-3, log also enclosed. That hole turns out to have made a very oblique intercept to stratigraphy (perhaps 60° or more) and hence apparent thicknesses are to be much discounted. Grades are quite exceptional too, but hardly representative.

The Mn plot is not very revealing. The Ag/Au ratio plot seems to indicate cycles which we used to think were primary but I now simply don't know.
- 7) Yes, stratigraphic tops are all to the N.E.
- 8) There are open spaces, within the silica, of all kinds and all ages. Some may result from decarbonatization, some from early tectonism, some from later tectonism, even pre- and post-metamorphism.
- 9) I follow what you're saying but I have more pieces of the puzzle to work with than you do. In fact we see vertical zonation well displayed in all areas (809, Morgan (incl. 902), 911, etc.) and the Au and Ag invariably occur within the top-most 300 ft. of Precambrian (i.e., within 300 ft. beneath the Paleozoic unconformity).

Holly Huyck
July 15, 1988
Page 3

The lateral zonation which we too took to mean syngenetic zonation earlier on, may in fact be only an artifact of lateral migration of supergene fluids from the 60° NE dipping Verde Fault.

It is all this lack of convincing evidence of one origin (or, alternatively, abundant evidence of multiple phenomena) that has prompted interest in your figuring out the iron mineralogies and Bob Hodder's isotope study. Of course I'm continuing to pursue the trace metal geochemistry end of it and to keep abreast of any new underground exposures as development proceeds.

Best of luck with the SEM and let me know what turns up.

Best Wishes,

A handwritten signature in cursive script, appearing to read "Don White".

Don White
Geologist, C.P.G.

DW:sk

cc: Carole A. O'Brien
Robert W. Hodder

June 28, 1988

MEMORANDUM

TO: D.C. White
FROM: R.W. Hodder
SUBJECT: Determination of relative abundance of isotopes of oxygen, in quartz and iron oxide minerals which are gangue to precious metals.

The Question - Can relative abundances of oxygen in gangue minerals indicate whether precious metals were deposited from ascending hydrothermal fluids of magmatic or metamorphic origin, as in primary chert, or from descending groundwater filling open spaces in the Verde fault zone?

The Relevance - If there is a means of discriminating primary from secondary quartz and iron oxides which contain precious metals it would help us anticipate and understand distribution of metals with respect to rock types, position relative to the pC-€ unconformity and present surface. This would be very useful in planning, grade control, and planning future exploration.

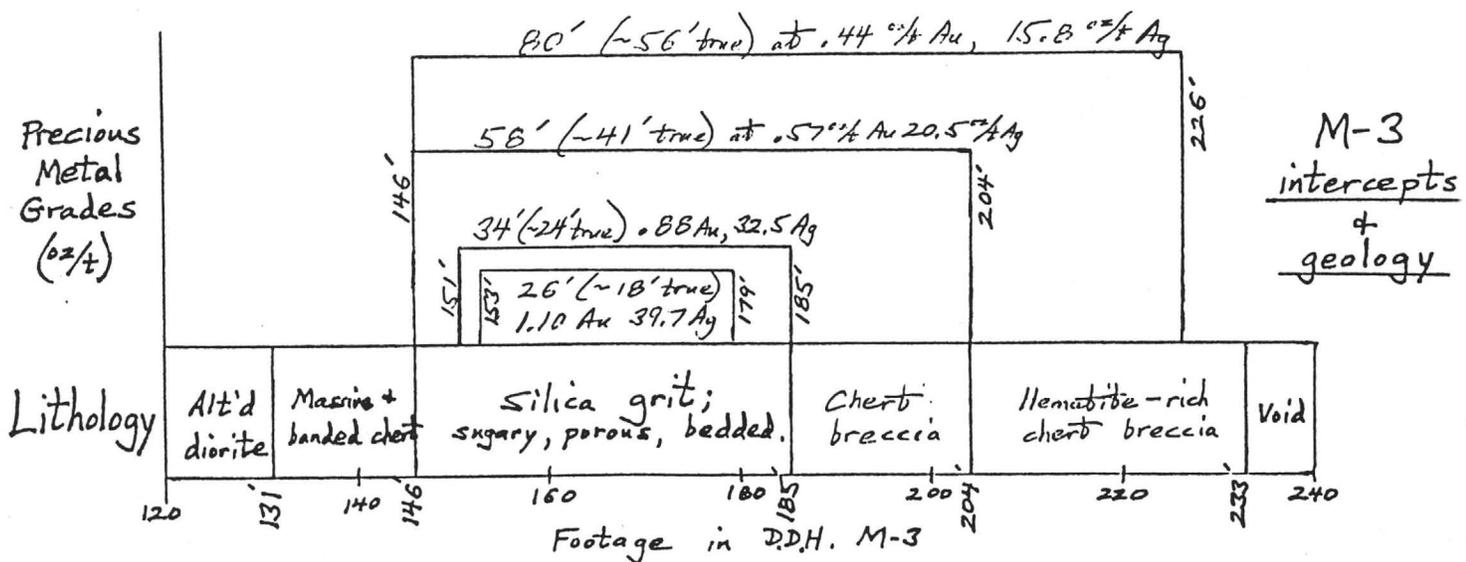
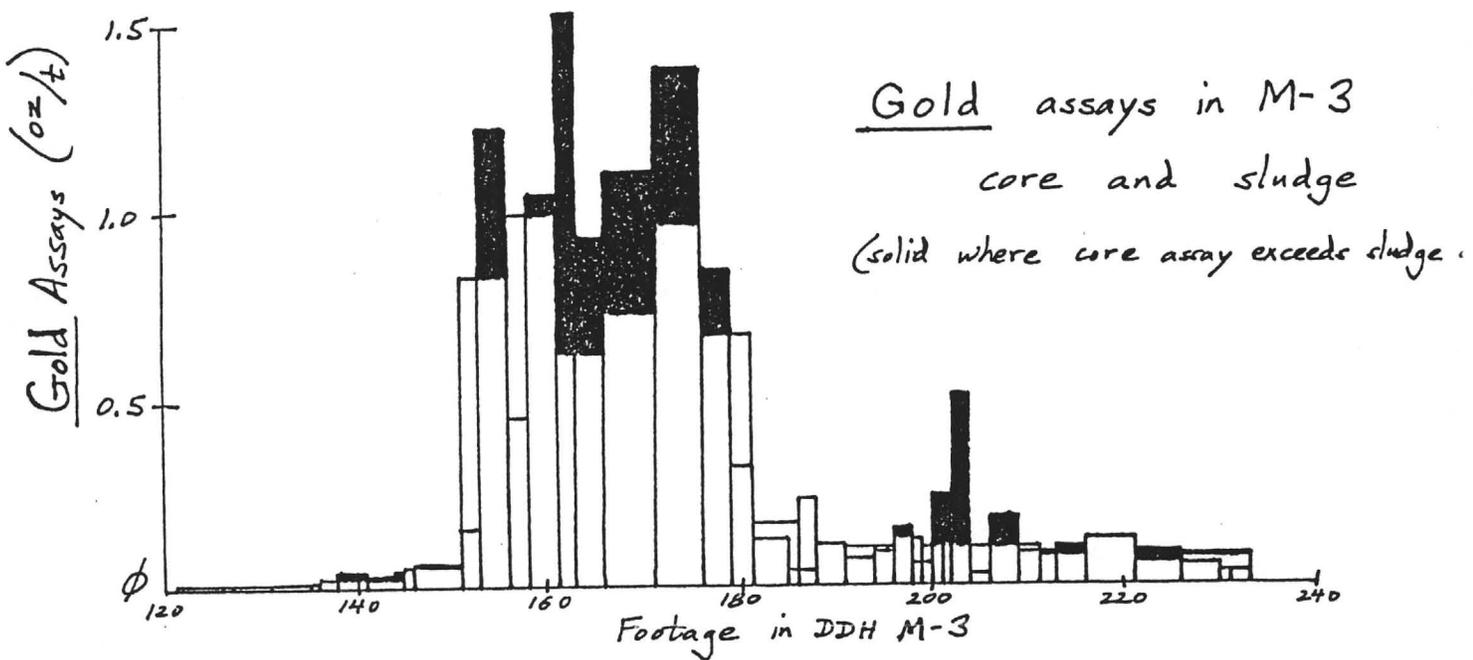
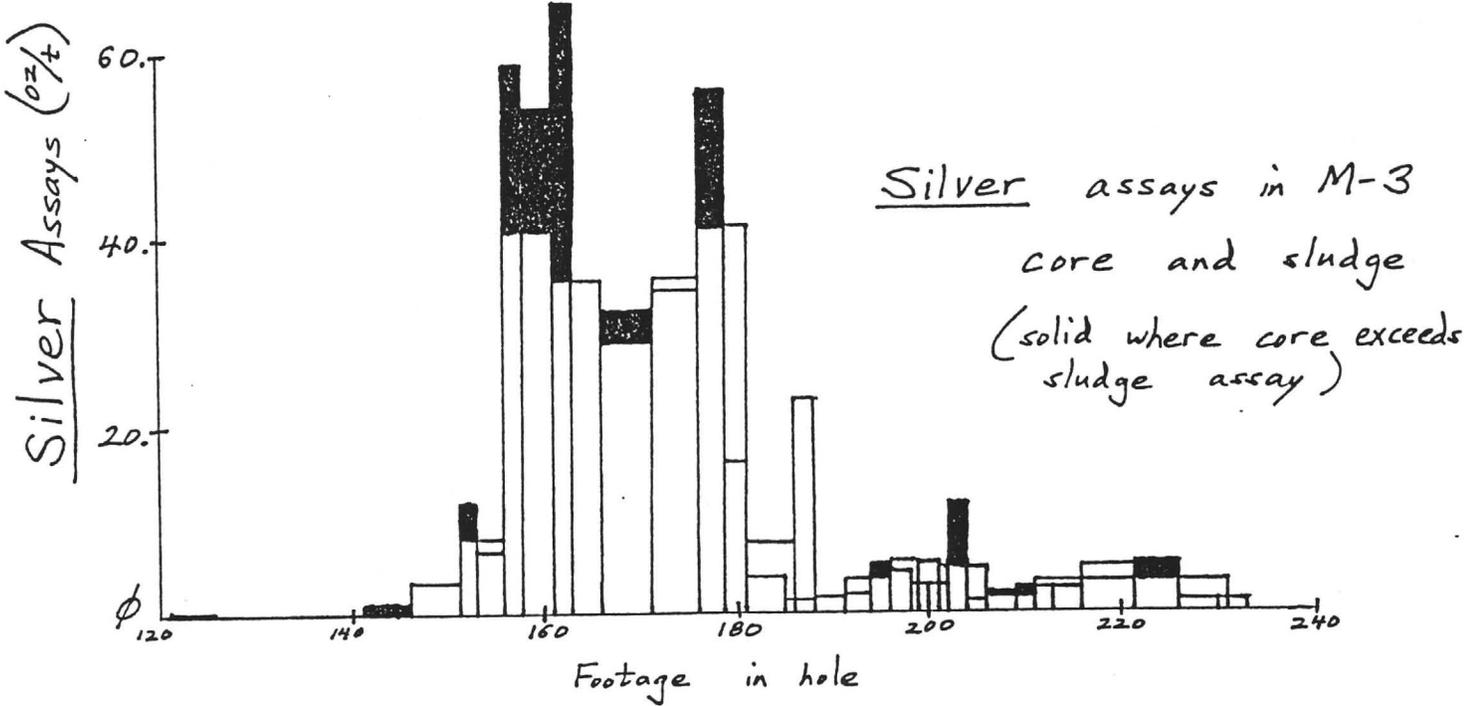
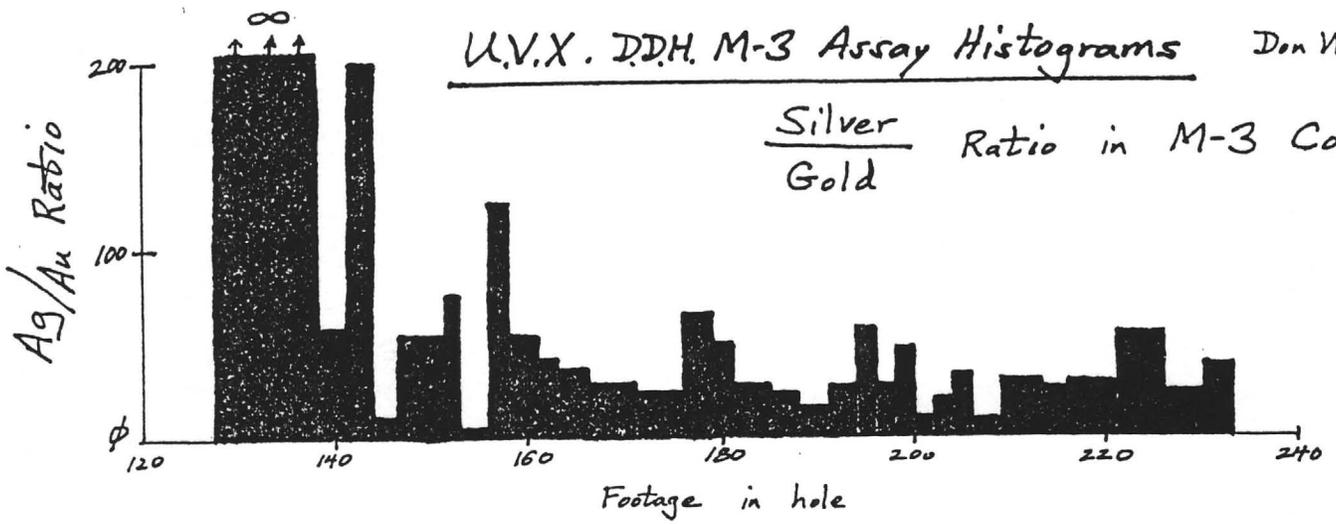
The Problem - If there has been extensive downward percolation of groundwater, rocks may have equilibrated to present oxygen isotope abundances.

The Method - I have six samples from the 905-12 raise which cross the east mineralized zone on the 950 level, the southern extension of the Gold Stope. These include beige banded edge of the diorite, dark brown iron-rich rock, grey and white sugary rock, yellow sugary grit, brown vuggy rock, and grey clasts from the sugary matrix. Quartz and iron oxides will be separated and analyzed by mass spectroscopy.

Cost - I anticipate starting with quartz samples from yellow sugary grit and grey and white sugary rock plus iron oxide from brown vuggy rock. This will mean three samples at a total cost of approximately \$500.00. I will monitor the cost closely.

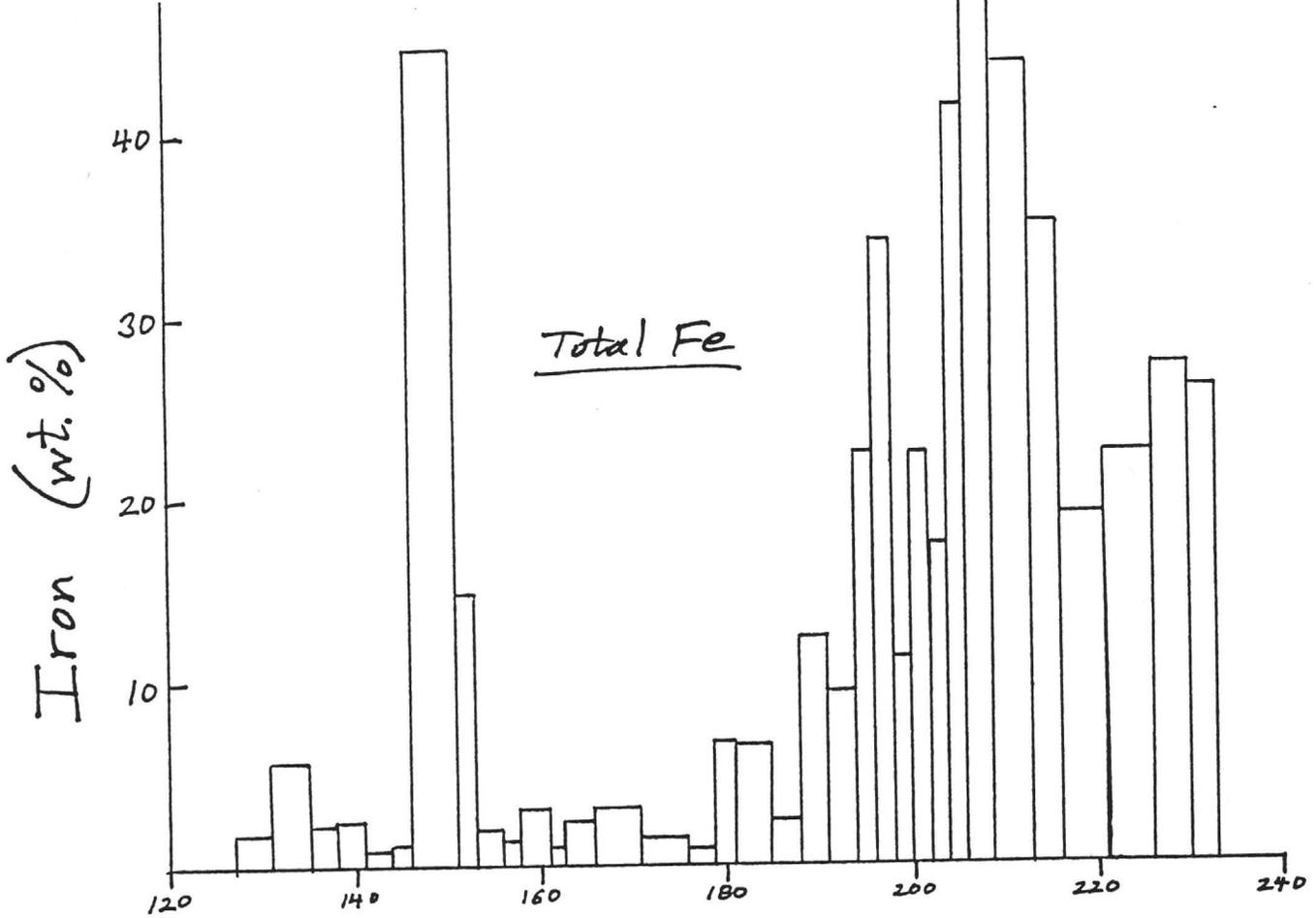
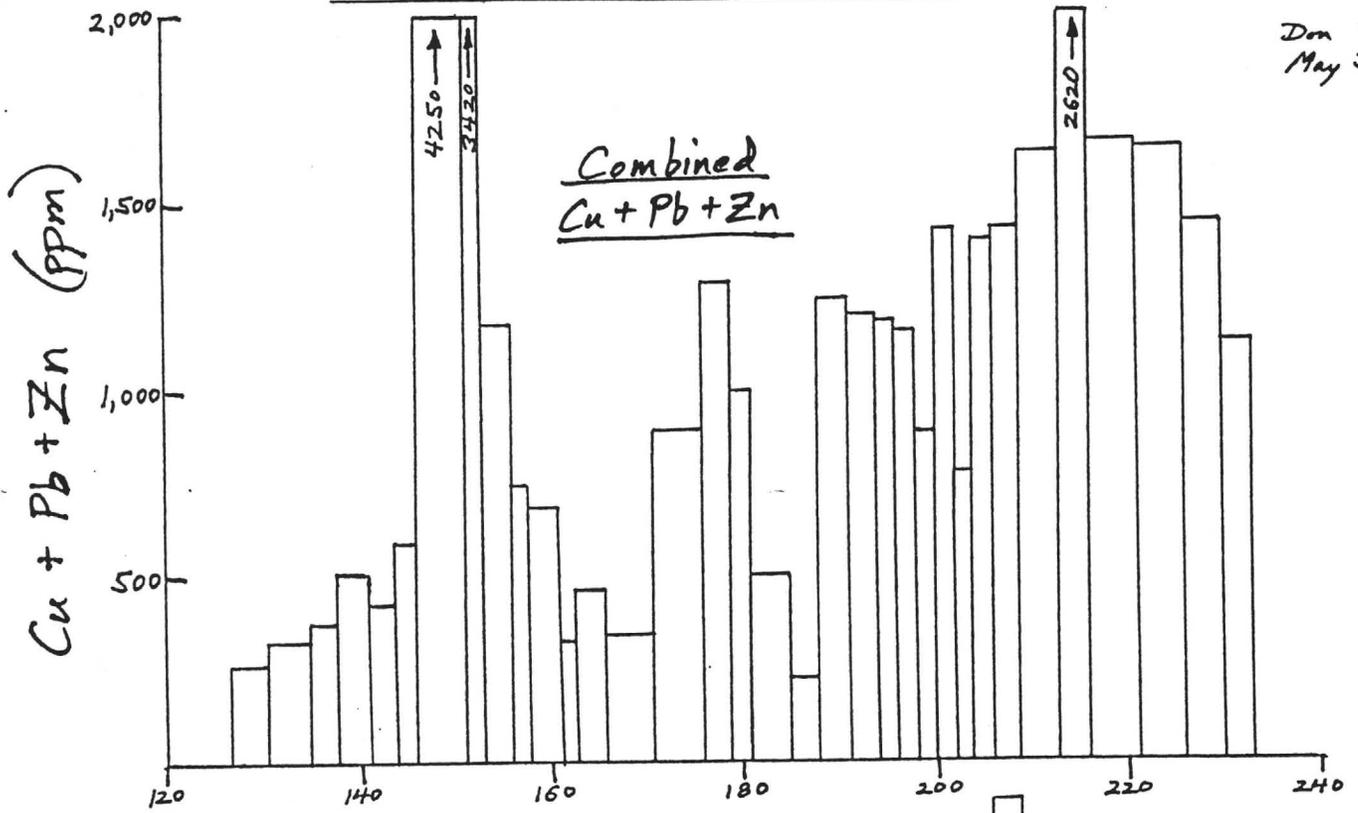
U.V.X. DDH. M-3 Assay Histograms

Don White Mar



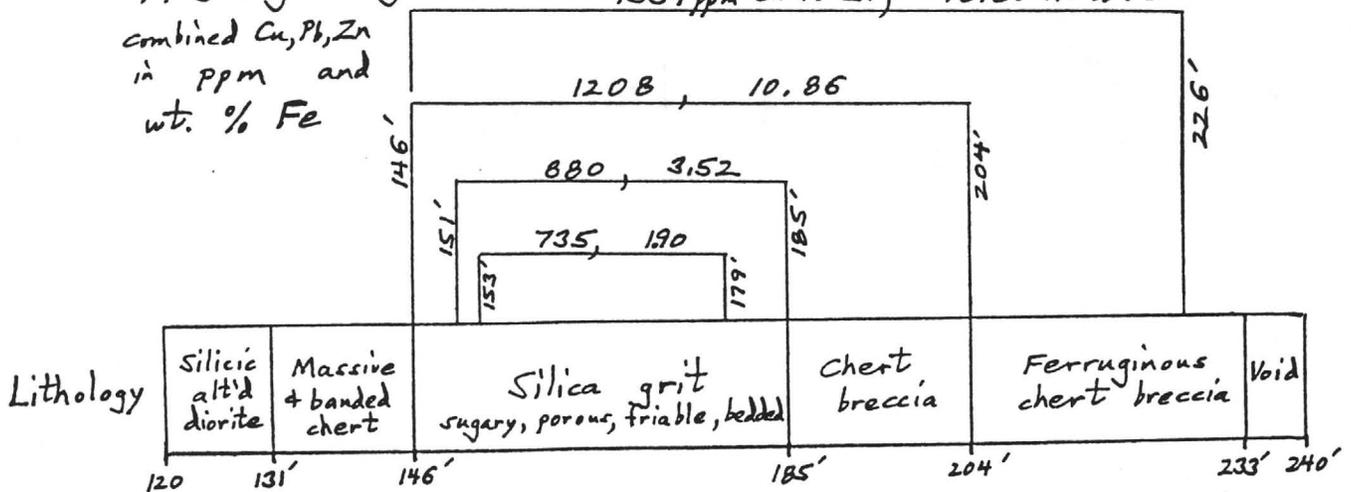
U.V.X. 2D.H. M-3 Combined Base Metal and Total Iron Histograms

Don White
May 31, 1987

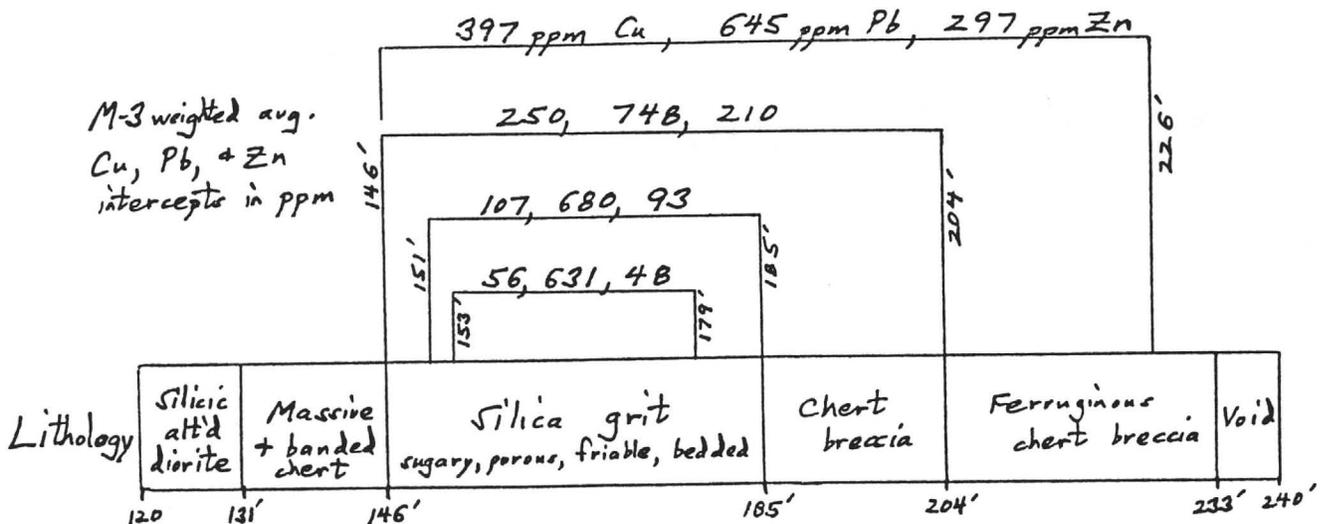
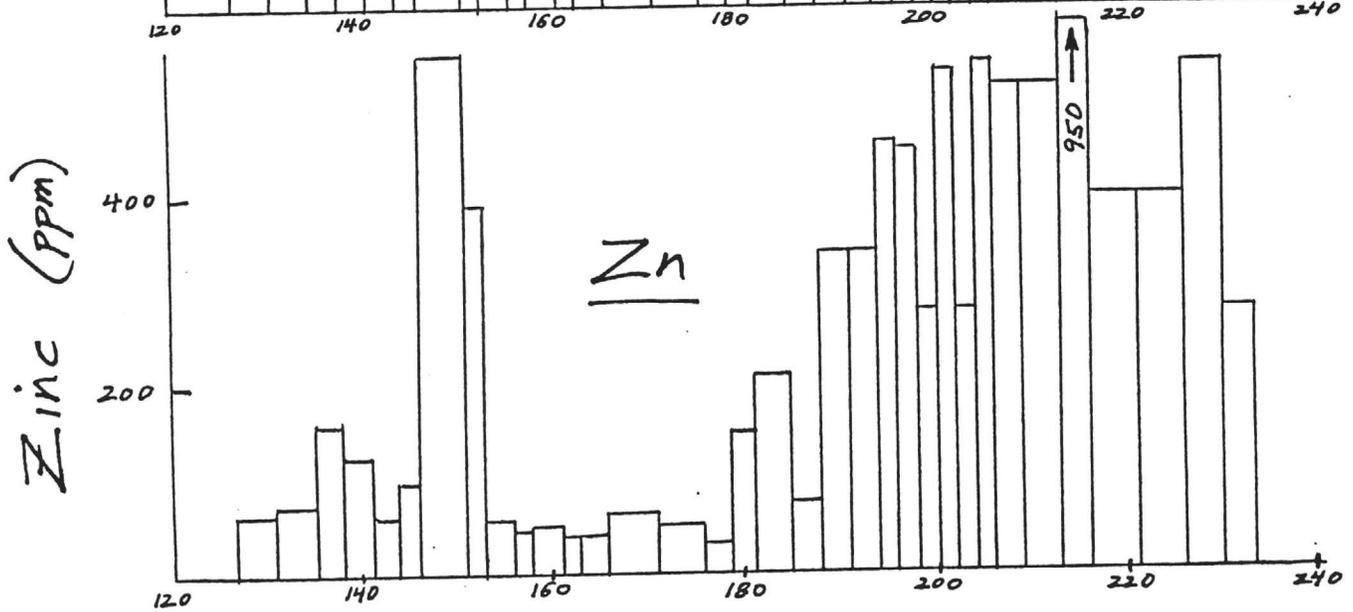
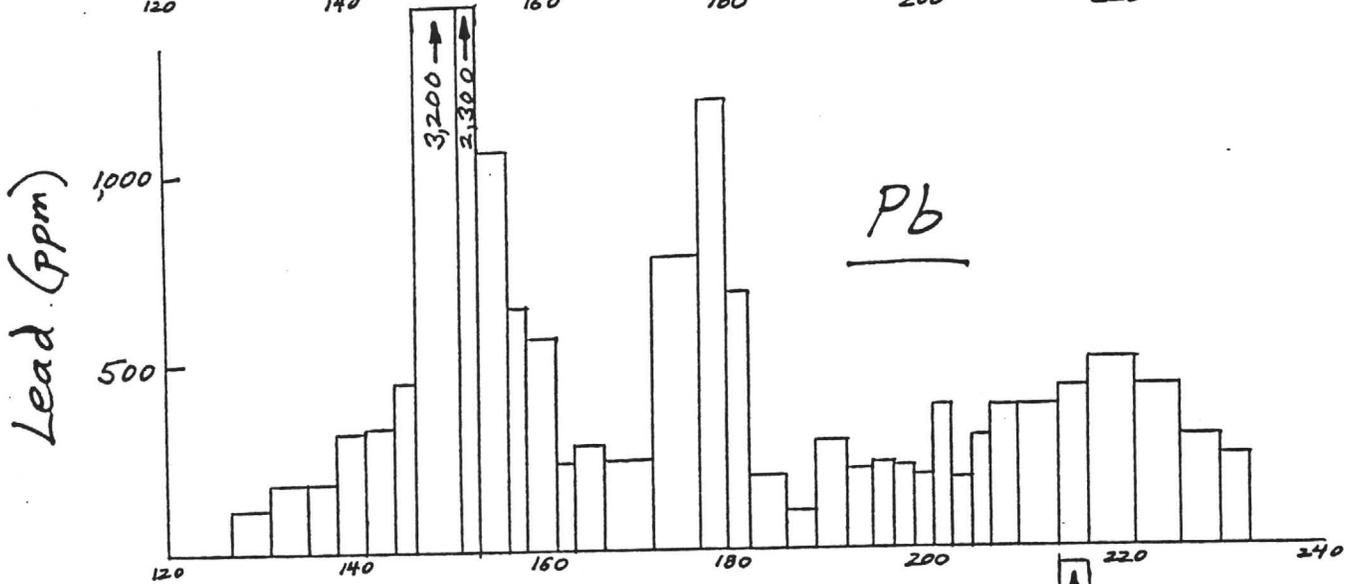
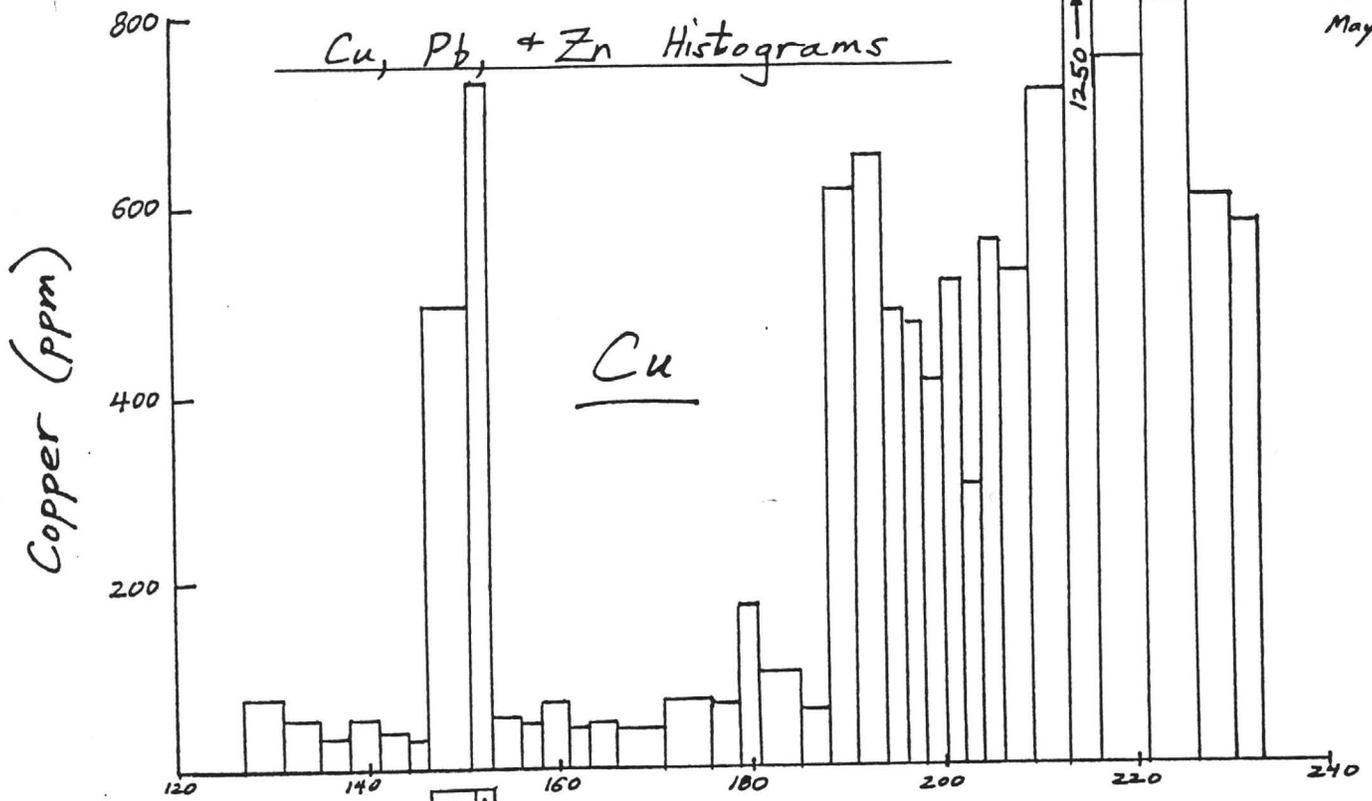


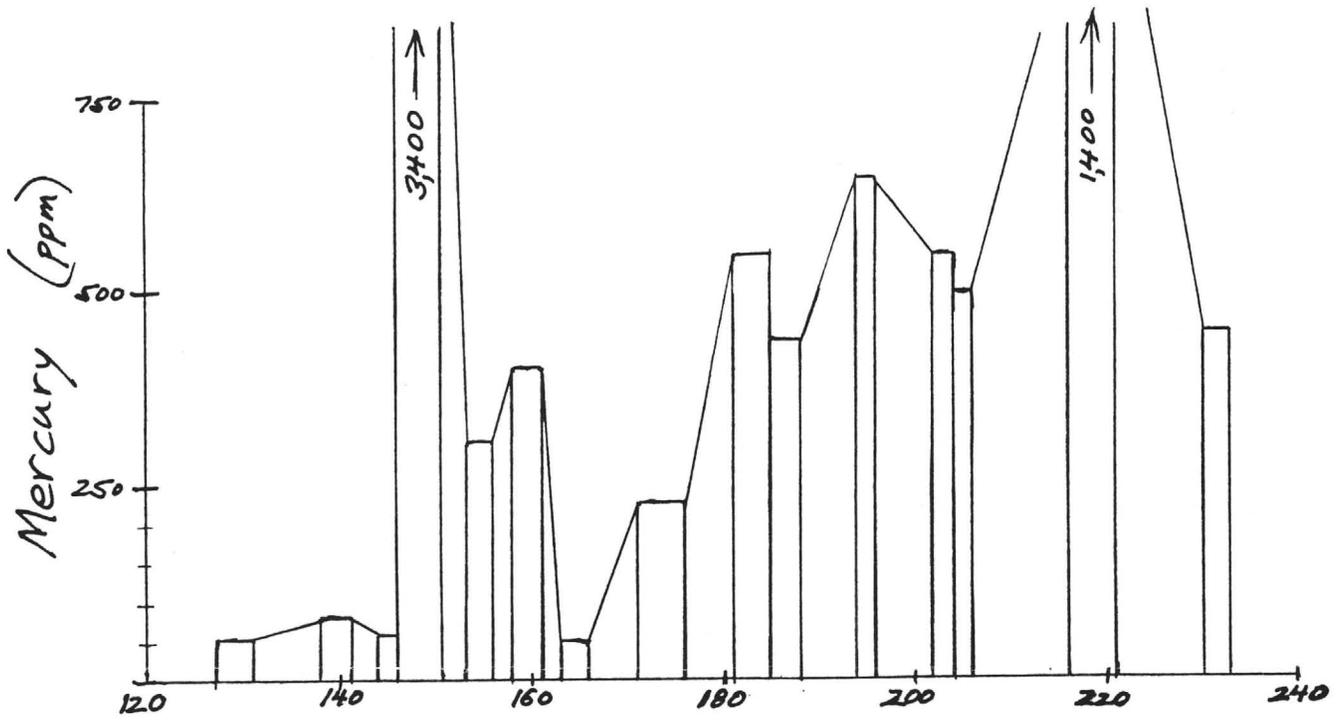
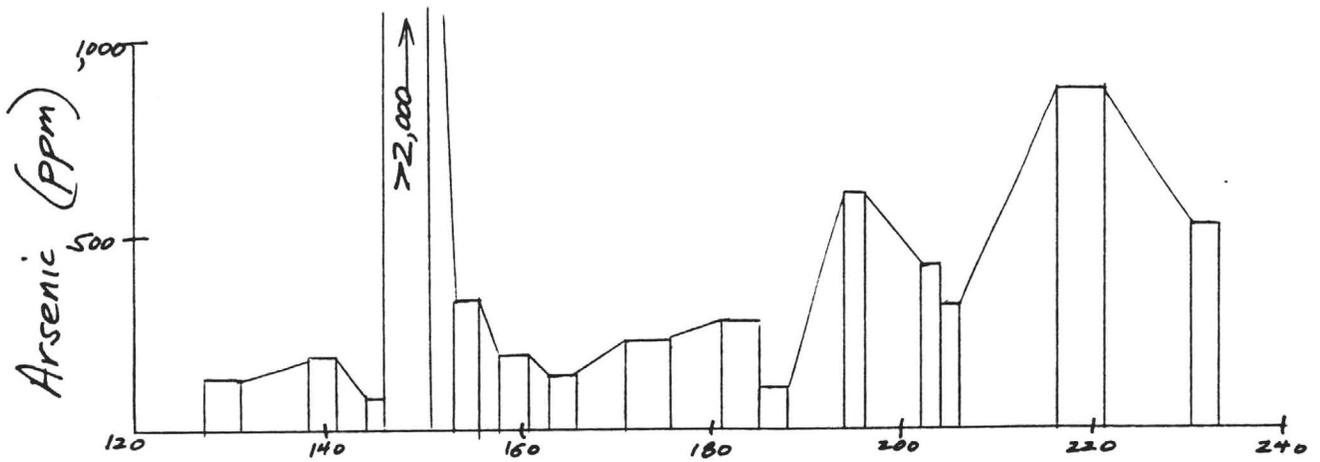
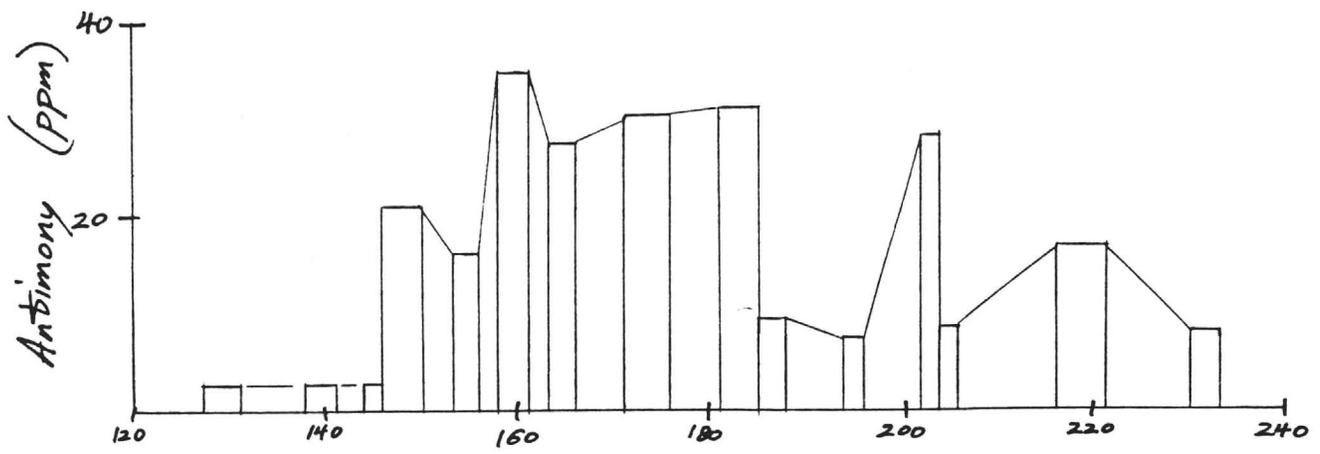
M-3 weighted avg.
combined Cu, Pb, Zn
in Ppm and
wt. % Fe

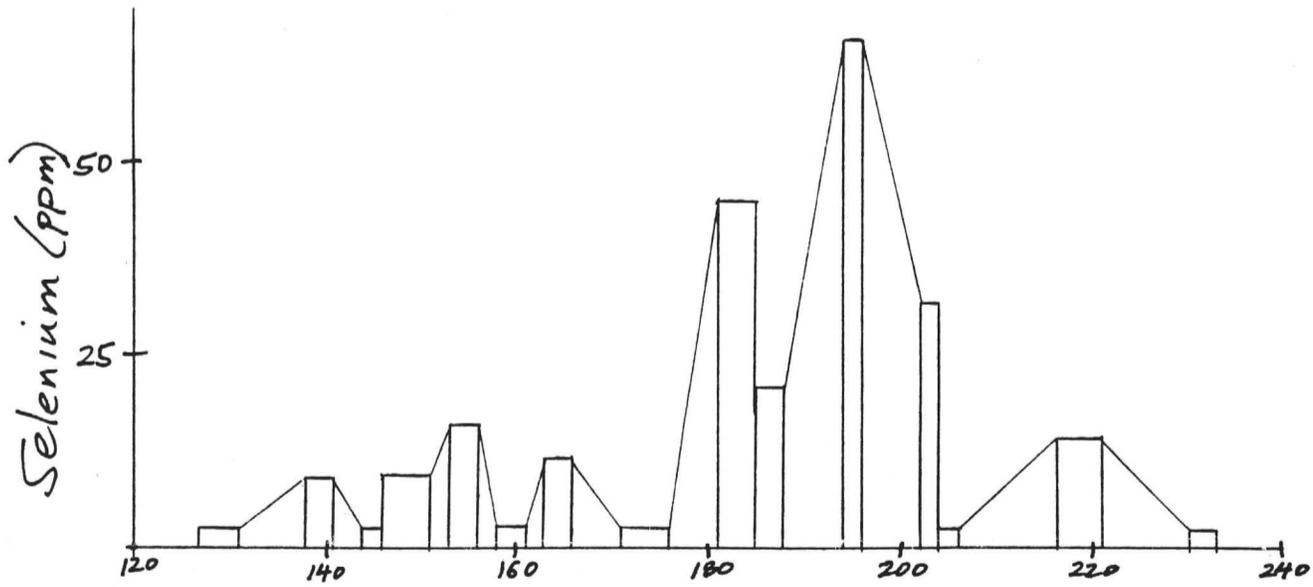
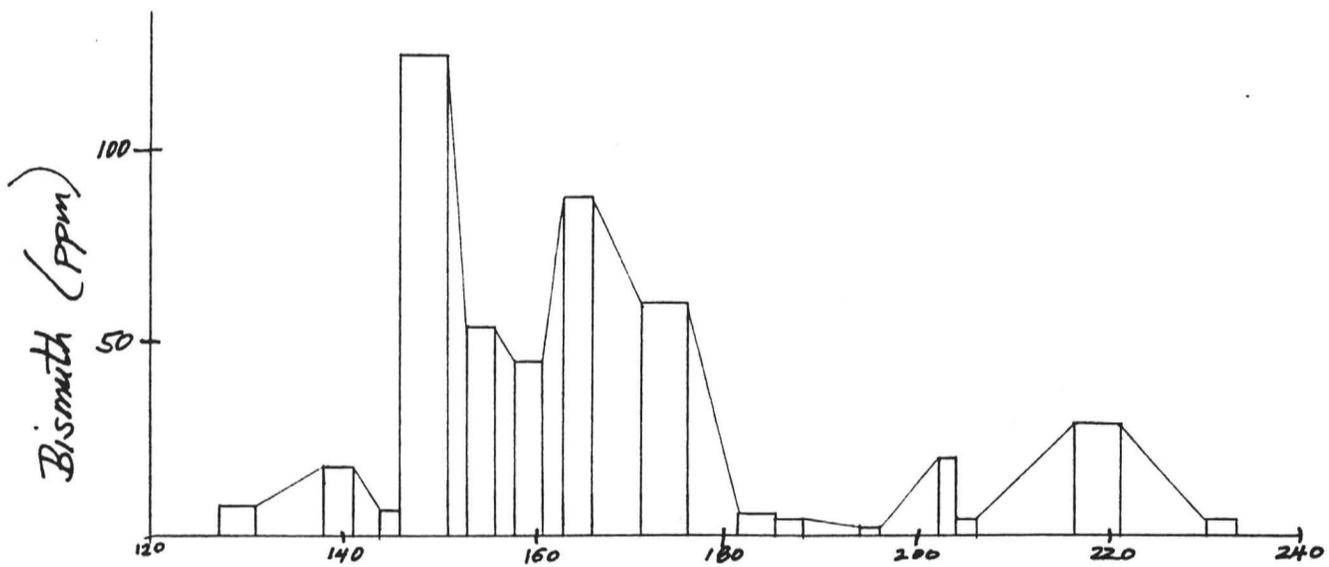
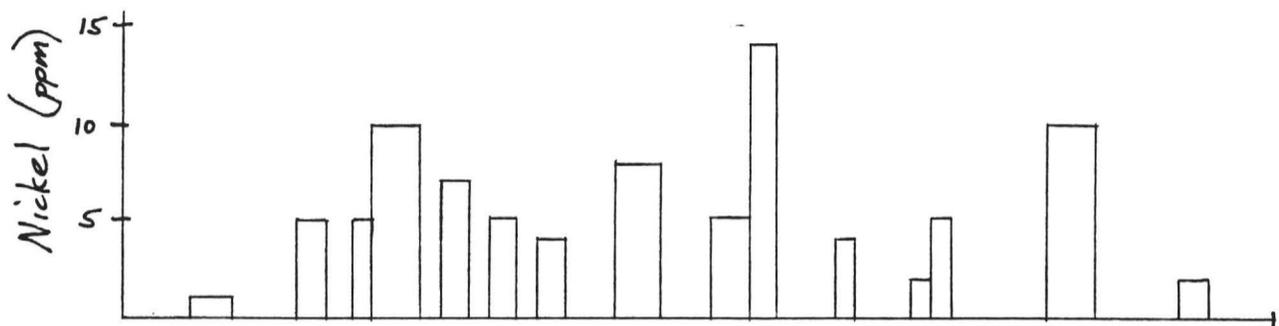
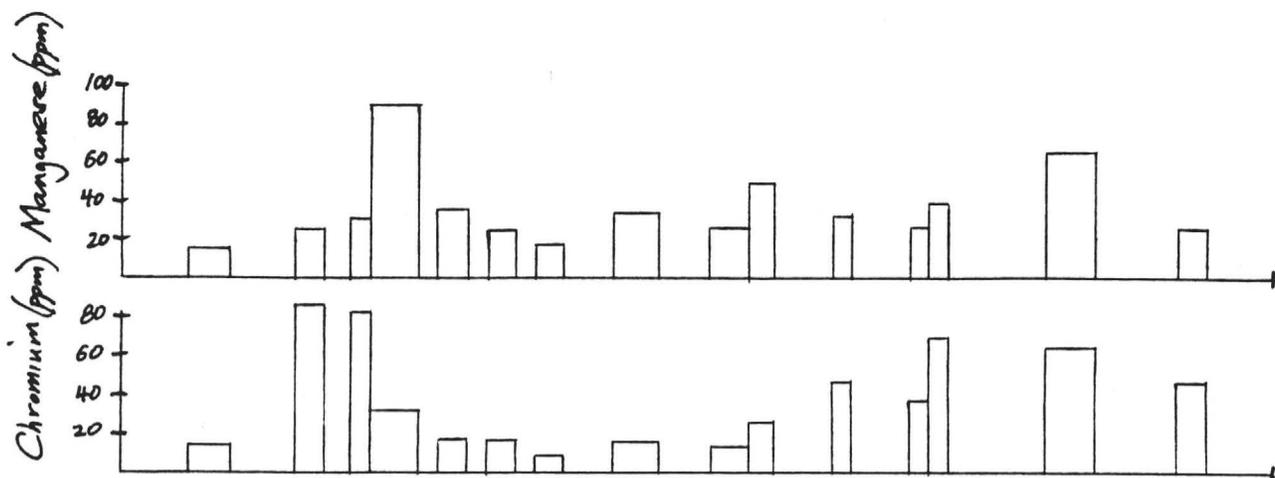
1339 ppm Cu+Pb+Zn, 16.80 wt % Fe



Cu, Pb, & Zn Histograms









June 21, 1988

Mr. Don White
521 East Willis Street
Prescott, AZ 86301

Dear Don:

Your samples, plans, and (more recently) assay information, have arrived in good condition. Tiebing and I began working on the materials last Monday (as soon as final exams had finished for spring quarter). I must say that we both found Iain Sloan's thesis to be very confusing. Perhaps having worked with the samples, you could understand what he referred to. For example, can you translate the following sentence (p.26)?

"Subelliptical quartz grains where present, have lobate sutured grain boundaries are foliated and are in the iron-rich microcrystalline quartz matrix that is composed of hematite, magnetite and smaller <0.1mm angular fragments of bedded chert (Plate 6A) or microcrystalline quartz."

I tried to compile what I thought Iain was saying in the enclosed Table 1. Please make any corrections.

I have several new questions regarding your ideas about the sequence of events in this deposit:

1. As you can see in Table 1, the descriptions suggest beige-banded silica as the first-formed rock (no breccia; botryoidal manganese). Grey breccia - includes "faintly banded" clasts--possibly beige banded?--and two types of quartz clasts. Ages of different fractures are unclear; only iron oxides are late. Ferruginous breccias are multiple, again with iron coatings or matrix occurring late in each brecciation.

This gives a sequence: beige - gray - ferruginous.

2. BUT your drill logs show banded beige clasts and purple-gray (same as Iain's "grey"?) clasts in silica-rich to ferruginous matrix for the "Banded Beige/Massive" segments. Does this classification simply indicate relative amounts of Iron-rich veining? Does "grey breccia" indicate simply more grey (versus beige) clasts?

3. In your letter of June 3, you wrote that the beige-banded or banded-and-massive silica is a "hornfelsed silica which rims the semi-concordant diorites, likely an immediate post-exhalative subvolcanic dome which locally broke through and was extrusive."

a. Do you mean that the diorite was a subvolcanic dome? Do age dates agree with this? (I don't have the Lindberg articles at my fingertips - sorry.)

b. How can the beige-banded/banded-and-massive silica represent both original silica and hornfels? Is it possible that the "hornfels" is basically silica flooding to form the "massive" portion of "Banded Beige/Massive" Silica?

c. At first I entertained that idea that the banded beige silica might be a bleached equivalent of the ferruginous breccias, as hinted at in your letter. However, Iain's and your descriptions, and the presence of beige-banded clasts in ferruginous breccia (see ddh902-7, 140'-159') suggest that these are originally distinct units. How does this fit with the beige being "hornfels?"

d. Zonation of banded beige is not clear with respect to diorite--too many faults to tell, in cross-section at least. Comments?

I see that you noted copper carbonates (malachite) in your logs. This means that at some point, carbonate was in the water. One model I am exploring is that the rock types that you see are dominantly stratigraphic, with beige-banded and grey silica forming at similar times (thus the mixture), and ferruginous breccias forming last. (Iain's chemistry suggests that the siliceous rocks are all original and hydrothermal.) Possible late silification could be associated with the diorite, but I'm not clear what else is. The gritty zone could have been quartz-carbonate-sulfide/oxide-gold. Dissolution of carbonates could form very vuggy breccias to grits, at the same time as oxidizing copper sulfides to copper carbonates (Homestake is a carbonate-arsenopyrite layer, and you have plenty of arsenic in the system albeit not exactly with gold).

4. My question is when this could occur. Was this hypogene, diorite-

driven or supergene? During our spring visit, you hinted that oxides and carbonates might be original. Do you have any further thoughts about that? For example, the iron oxides could be original, while the copper carbonates could be exotic supergene.

5. The copper-silica ore occurs vertically above the gold-rich zones. Wasn't this entirely sulfides (chalcocite, in particular). Wouldn't this place much of the gold below the "gossan?" All we have seen thus far on XRD is hematite--not very helpful for using Blain and Andrew's paper.

6. Do you have Cu, Pb, Mn contents for these samples? If Mn is consistently high in the banded-beige silica, this may be a more peripheral ochre/umber to, say, the grey or ferruginous breccias.

7. Is stratigraphic "up" always to the NE? Can you tell?

8. Iain believes that formation of vugs to be "late stage" (p. 58) I'm not sure whether he means post-lithification, syn-intrusion or supergene. Comments? I guess that he means pre-metamorphic at least, since he considers veining to be pre-metamorphic (p. 57).

9. I suggest mapping Au/Ag on the cross sections. Silver seems to be more mobile, so it either leaves the system or moves farther down under supergene conditions. The Au/Ag tends to decrease from weathered surfaces to areas unaffected by supergene enrichment (at least in epithermal and some disseminated copper deposits). A vertical enrichment would suggest supergene alteration. A horizontal enrichment would be more likely caused by original alteration. Based on a quick view of Au and Ag plots, the 911 section indicates original zoning, while the 902 section suggests supergene remobilization. This could be due to original zonation. However, I would look for more supergene affects in 902. (Surprisingly--as 911 is closer to the surface.)

Finally, I have a few comments about our XRD work. Thus far, Tiebing has run 12 samples, including representatives of each breccia type. In every sample, we have identified quartz and hematite. No magnetite, goethite nor jarosite peaks have been seen. Minor amounts of illite are also present in a few samples. Sample 902-3-112-116 contains large amounts of either chlorite or kaolinite (XRD peaks are very similar). Based on Iain's description of altered diorite, I'd say that Kaolinite is more likely, or there is a mixture. I'm surprised that the mineralogy is generally so uniform. Perhaps other phases are present in quantities too small to see without mineral separation. (We are trying to avoid this, as

Tiebing is not receiving anything for his efforts. I have asked the department to pay him something for his work, but I have no answer yet. Also, the possible minerals of interest may not separate well enough to help us.)

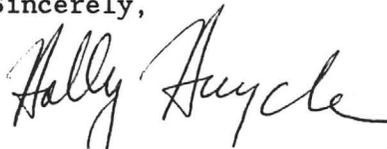
As for SEM, the cost is \$65 per hour. We can look at the iron phases, 5 samples for starters, then decide whether to do more. The samples would most likely be 2 grits, 2 ferruginous, 1 beige. The Materials Science technician thinks that we can probably do 5 samples in approximately 4 hours (or ~\$260). This would leave some funds for any follow-up work, so we would not spend \$500 all at one shot. What do you need from us to appropriate funds for SEM? I can't use it until I have the funds. You mentioned that you want to talk about this first. We plan to do all the XRD before picking samples to prepare for SEM. Would you rather we picked only 2 or 3 first? Tiebing is available for July only, and I will be working on other projects June 22 - July 1 and July 7 - August 22. (I have one proposal, 2 manuscript revisions and 2 other projects in addition to this. I might be able to work on SEM July 22, just before I head to Oklahoma.) We will be able to do the XRD, then wait for your comments, and perhaps I could do SEM in late August, if you would prefer. (That's pushing timing, however. The SEM technician is available only through August 31.) I do need a decision about whether you are going to pay for SEM soon, however, because I need to schedule time with the Materials Science Department, and Tiebing will do sample preparation while I am out of town. As Blain and Andrew note, mineralogy may or may not be very helpful in determining extent of supergene enrichment. The surprisingly simple mineralogy seen thus far is not diagnostic. I suspect that morphology of these minerals will be more helpful.

As you can see, we are getting some results, and are doing as much as

possible in a limited time frame. I am quite interested in your answers to my questions and in the project in general. If you want more work done beyond the scope of what Tiebing and I are currently doing, I will see if another student can work this fall. Also, I have asked Dan Sims (who will start at the University of Arizona next January) to call you about the project that some other UA student had dropped. I don't know whether you and he will work out an arrangement, but he is a very bright student and a careful observer.

I will keep you updated as more results come in, and I look forward to your prompt response about SEM. Thank you for all the information; it has helped us put the samples in context. Your answers to my questions will help to elucidate the issues even more.

Sincerely,

A handwritten signature in cursive script that reads "Holly Huyck". The signature is written in dark ink and is positioned between the word "Sincerely," and the printed name "Holly Huyck".

Holly Huyck

mab

Table 1. Clast Descriptions of Various Breccias Based upon
Fain's own Thesis (April, 1988)

Name; General comments	Texture + mineralogy	Clasts	Matrix	Fracture
1) Beige Banded "chert"	Faint Banding 50% anhedral, monocrystalline quartz Disseminated magnetite, faintly banded Traces of: albite, rutile, fibrous malachite Local conchoidal Manganese oxide			small quartz veinlets in beige banded chert.
2) Grey Breccia Order of fractures sunward.	≤ 5% vugs Quartz - rich clasts in iron oxide quartz matrix Traces of clay, sericite, iron oxides and epidote in clasts	80% microcrystalline quartz 10% anhedral interlocking quartz grains into microcrystalline quartz, faintly banded	Tiny iron oxide - chlorite in microcrystalline quartz. Local vugs filled with iron oxides, sericite In vugs, iron oxide may be replaced by acicular quartz.	veinlets - Anhedral Qtz veinlets ± ≤ 10° magnet Fractures: Malachite ↓ veinlets of quartz + Fe ↓ iron oxide
3) Ferruginous Breccia Several episodes of quartz veining. hematite coatings are late on microcrystalline quartz matrix	55% microcrystalline quartz 35% quartz grains 20-30% iron oxides Sequence: Qtz coated by iron oxides; → conch Qtz growth 5% vugs: coated with: - conch quartz - fibrous or colloform sphalerite (?) (later fragmented) - rutile	- microcrystalline quartz - microcrystalline quartz with relict quartz veinlets - quartz grains - anhedral magnetite or hematite fragments - banded chert (Qtz mt-banded), with Qtz veins [beige?] - jasper	- microcrystalline Qtz, outlined by hematite - hematite matrix - massive magnetite - ≤ .1 mm fragments of bedded chert or microcrystalline Qtz, hm, mt Traces of: chlorite, kaolinite, malachite	iron oxide in fracture coating microcrystalline quartz

⇒ [What is % clasts versus matrix?]

⇒ [What is % clasts vs matrix?]

Qtz veins [beige?]

FeOx = iron oxides



Fisher winze

809
D.D.S.

MORGAN
WINZE (800-950)

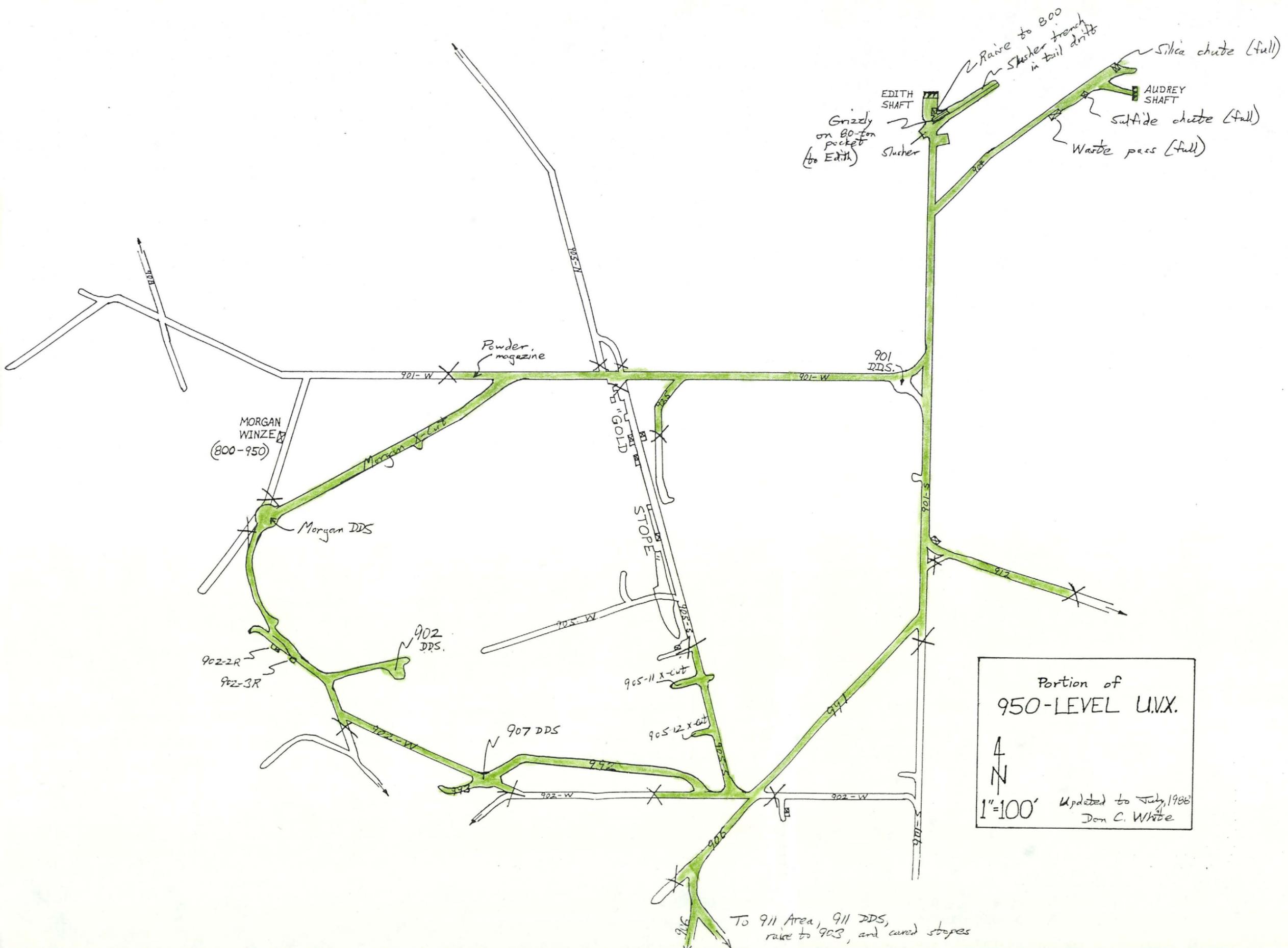
EDITH
SHAFT

AUDREY
SHAFT

Ron

X = Cave

Portion of
U.V.X. 800 LEVEL
N
1"=100' Updated to July, 1988
Don WHITE MAY '85

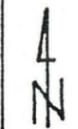


Portion of
950-LEVEL U.V.X.
N
1"=100' Updated to July, 1988
Don C. White

X = Caves

To 911 Area, 911 DDS, raise to 903, and cured stopes

Portion of
 U.V.X. 1100 LEVEL
 1"=100'
 Updated to July '88
 DON WHITE MAY '86



X = Cave



M E M O

TO: Dale Allen, Ron Short, Carole O'Brien, Anthony Budge
FROM: Don White
DATE: July 21, 1988
SUBJECT: Vulture tailings grade boundary staking and possible additional reserves

At my suggestion and with Ron's approval, I have just completed marking the .020 oz/t grade boundary on the west perimeter of the stamp mill tailings. That line is now demarcated by bright blue pickets so positioned that the excavation equipment may take everything east of and up to the pickets, but leave the pickets standing and what lies beyond.

Of course there is some good likelihood of lowering the cutoff grade in the future. If that can go as low as .014 oz/t, at least another 150,000 s.t. of tails are available in physical continuity with the stamp mill tailings already planned for leaching. What's more, no effort has been made to systematically identify tailings of that low grade. Considerably more may be available around the north and west side of the old Denver Mill.

While on site I took the opportunity to sample the stamp mill tails south of Vulture Mine Road. There are small amounts (total likely less than 1,000 s.t.) of tails physically recoverable along the dry stream bed banks for about a mile below the main tailings area. Three samples now in for assay will tell us whether those tails are worth going after with a small bucket loader or similar light equipment.

The most significant new observation is that there may be an extension of the best grade tailings west from the old stamp mill and in addition to those documented in my reserve memo of July 8, 1988.

While staking the .020 grade boundary I noted the newly disturbed area beyond any previously recognized tailings. It was all yellow, typical of stamp mill tailings (as opposed to pinkish cyanidation tailings). In a newly excavated but yet unfilled garbage pit I could see gentle west-dipping bedding, indicating a source from the stamp mill. This find is due north of the Denver Mill and due west of the old stamp mill. It juxtaposes the highest documented tails thus far (.073 oz/t at site T-104).

These "new" tailings were pretty well concealed by road metal and wind-blown sand and pink cyanide tailings. Only by heavy equipment having disturbed the surface did it become clear that they are there. Nine new hand-auger holes were put in to sample the area.

If we get lucky and the approximately 100,000 ft² new tails at average 2 ft. thickness happens to run .05 oz/t recoverable, then we will have added an easy 500 ounces gold to reserves. That is about a 10 percent add-on; not bad for a by-product of a garbage hole!

DW:sk

Ron Short, Carole O'Brien, Anthony Budge
July 21, 1988
Page 2

- 2) The vein is overall exceedingly narrow, prone to pinching out almost entirely within just a few feet. The greatest thickness is five feet at the N. adit.
- 3) There are offsets of the vein by post-mineral shears.
- 4) There are no decently mineralized parallel veins or structures.
- 5) The wall rock, though locally cut by thin quartz and calcite veinlets, is barren.

What little silver does occur is probably as argentiferous galena and associated with other sulfides (chalcopyrite, pyrite) in the quartz. Indeed high grade pockets could occur and probably have been found (tunnels caved now) but they would be very small and unlikely to pay for the lean intervals between.

No further interest is justified in the Silver Queen property.

DW:sk

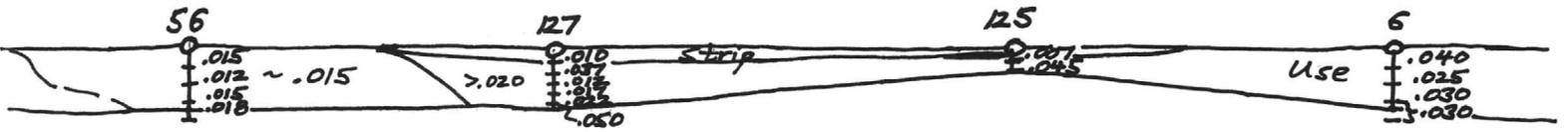
Attachments

W

See accompanying map for traces of X-sections # 1 thru 7

E

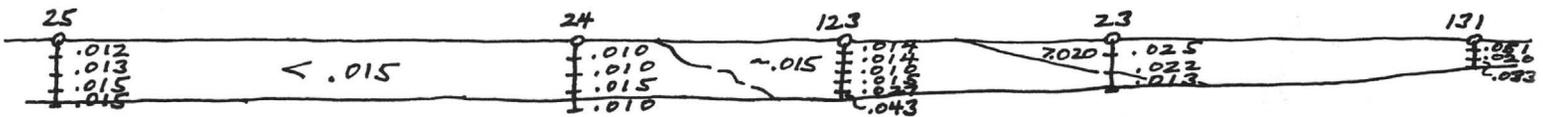
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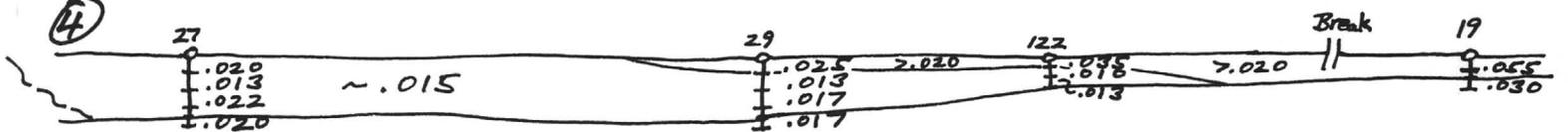
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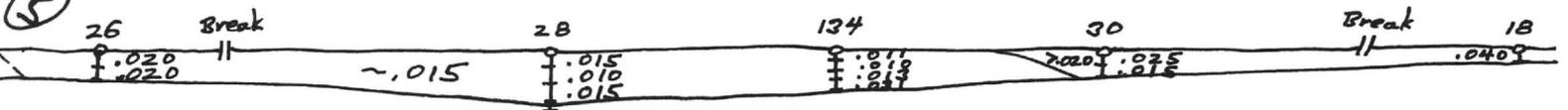
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④



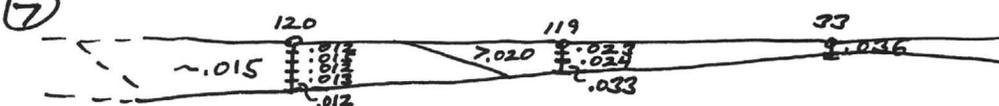
⑤



⑥



⑦



1" = 50'
No vertical exaggeration

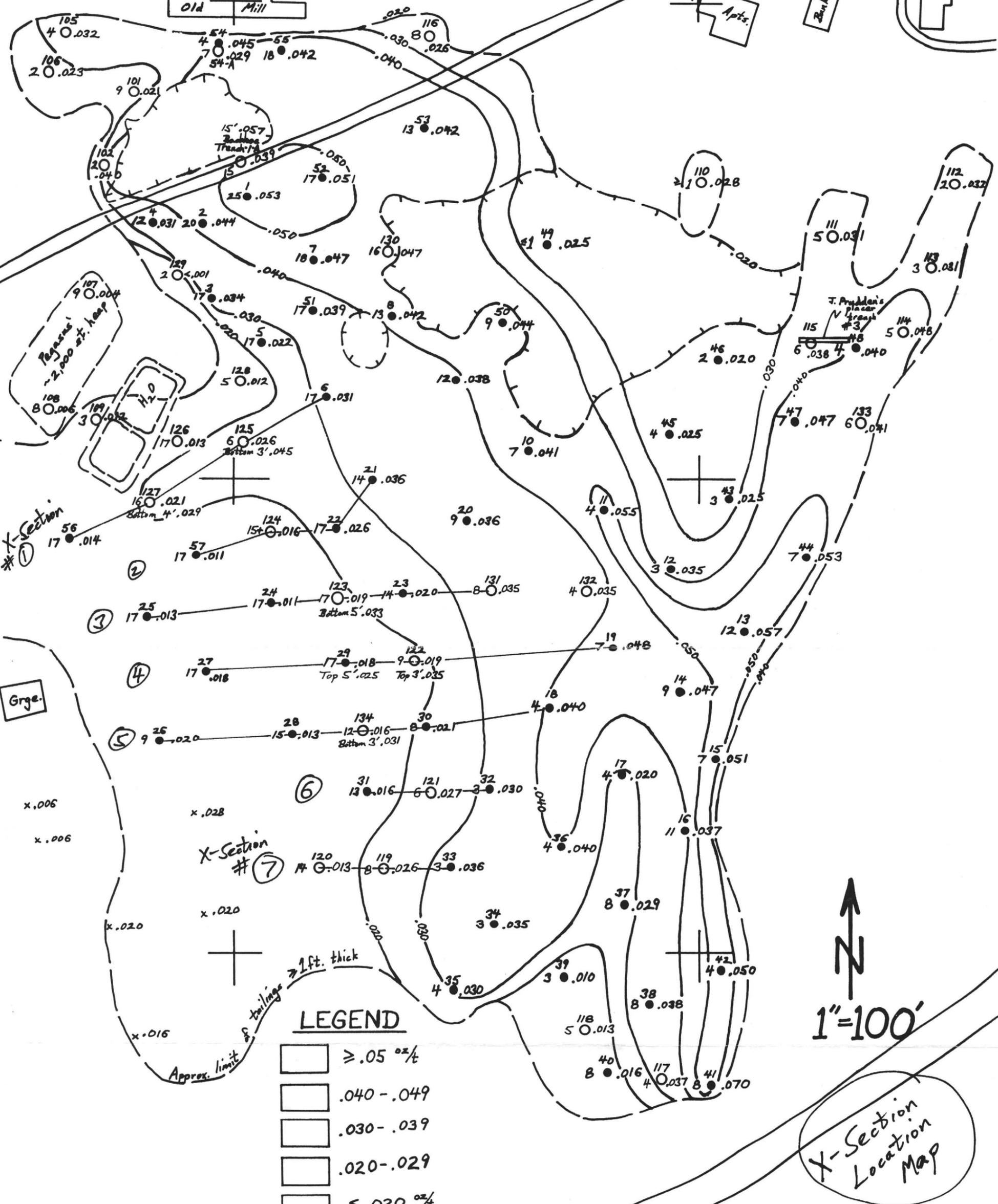
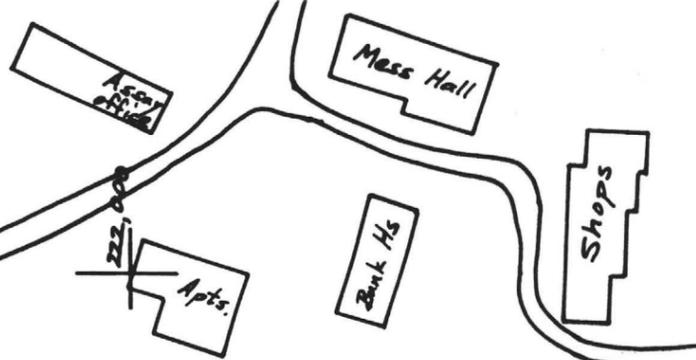
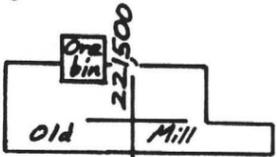
Vulture Tailings

Work sheet X-sections ~ W-E
from hole to hole in area of
.015 and .020 % Au grade boundary

Don C. White - July, 1988

W. Incline Shaft

Chute



X-Section #1

Grge.

x.006

x.020

x.016

x.028

x.020

x.020

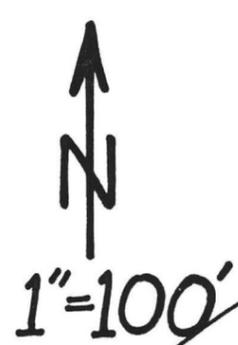
x.016

x.016

LEGEND

- $\geq .05 \text{ oz/t}$
- $.040 - .049$
- $.030 - .039$
- $.020 - .029$
- $< .020 \text{ oz/t}$

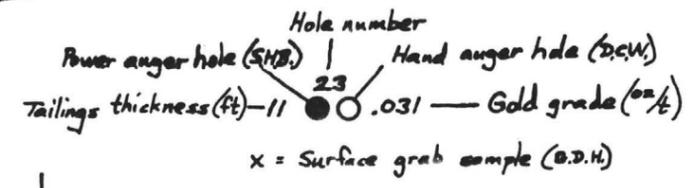
Approx. limit of tailings $\geq 1\text{ft. thick}$



X-Section Location Map

Vulture Mine Road

Vulture Tailings
Contoured Gold Grade (oz/t)
<.02 oz/t thru >.05 oz/t by .01 oz/t



Don C. White - July, 1988

Copy for Don

**GEOLOGIC MAP
OF THE VULTURE MINE AREA,
VULTURE MOUNTAINS,
WEST-CENTRAL ARIZONA**

Stephen J. Reynolds¹, Jon E. Spencer¹, Ed DeWitt²,
Don C. White³, and Michael J. Grubensky¹

May, 1988

Arizona Geological Survey

Open-File Report 88-10

1 -- Arizona Geological Survey

2 -- U.S. Geological Survey

3 -- Consultant, Prescott, Arizona

INTRODUCTION

The Vulture Mountains, located directly southwest of Wickenburg in central Arizona, contain one of Arizona's premier historic gold deposits, the Vulture Mine. This mine yielded about 340,000 ounces of gold and 260,000 ounces of silver, with average grades of 0.35 oz/ton gold and 0.27 oz/ton silver. In spite of this significant production, the mine has received relatively little geologic study until recently (White, 1988). In order to better characterize the geologic setting of this historically important gold deposit, we mapped the geology of approximately 10 square kilometers centered on the mine. This mapping was partially supported by the U.S. Geological Survey and Arizona Geological Survey Cooperative Geologic Mapping (COGEOMAP) Program.

GEOLOGIC SETTING

The Vulture Mountains are in the Basin and Range Province, a region that underwent crustal extension during Tertiary time. Tertiary crustal extension was severe within the Vulture Mountains region and resulted in a series of steeply tilted fault blocks bounded by low- to moderate-angle normal faults (Rehrig and others, 1980; Grubensky and others, 1987). The oldest rocks exposed within the fault blocks are Lower Proterozoic metamorphic and granitoid rocks. These have been intruded by a large pluton of Cretaceous granodiorite, smaller plutons of Cretaceous granite, and numerous middle Tertiary dikes and sills. The crystalline basement is overlain by a sequence of middle Tertiary volcanic and minor sedimentary rocks that is at least 1 km thick. The Tertiary units generally strike north to north-northwest and dip steeply to the east; they are locally overturned into steep westward dips in the most highly rotated fault blocks. The tilted Tertiary and pre-Tertiary rocks are locally overlain unconformably by mid-Miocene basalt flows and Quaternary to Upper Tertiary surficial deposits.

PRE-TERTIARY ROCKS, STRUCTURE, AND MINERALIZATION

The oldest rocks near the Vulture Mine are Proterozoic metaigneous and metasedimentary rocks that partially host mineral deposits at the Vulture mine and that form low, rounded outcrops to the north, east, and south of the mine. These include the following rock types:

- (1) quartz-feldspar-sericite-chlorite schist and phyllite derived from fine-grained, clastic sedimentary rocks. These include light-gray to tan quartz-sericite schist, greenish chloritic schist, locally with actinolite, medium- to dark-gray sericitic phyllite, and dark-brown, hematite-stained metasandstone and schist. This unit is variably compositionally banded or laminated, with layers ranging from 2 to 20 mm thick. Some units probably include metamorphosed volcanoclastic rocks;
- (2) dark-colored, fine-grained amphibolite derived from mafic igneous rocks; and
- (3) medium- to fine-grained, variably foliated granite and granodiorite.

Lithologic layering is generally parallel to foliation and schistosity, which strike west to northwest and dip moderately to steeply to the north and northeast. This fabric is interpreted to be Proterozoic in age because of its style and orientation, and its absence in the Cretaceous plutons.

Intruding the Proterozoic rocks is a Cretaceous granitic pluton that crops out over 1 square kilometer west of the Vulture Mine and extends as a north-dipping sill-like apophysis eastward into the mine workings (White, 1988). The main pluton is composed of two phases and their sericitically altered equivalents. The oldest phase is a medium-grained biotite granite to granodiorite that is equigranular or rarely porphyritic with feldspar phenocrysts as large as 1 cm. This phase is cut by northeast-striking, steeply dipping dikes and more irregular apophyses of lighter colored granite, which typically contains medium-grained muscovite, in part of secondary origin, and conspicuous quartz eyes as large as 1 cm in diameter. The abundance of muscovite increases with the degree of alteration, and some outcrops of altered granite contain more than 20 percent muscovite. Alteration has resulted in the destruction of plagioclase and mafic minerals, converting them into fine-grained sericite, hematite, and clay minerals. Many dikes of granite are flanked by muscovite-rich alteration selvages. The granite is most highly altered in the sill near the Vulture mine, where it has been converted into a

muscovitic quartz-porphyry due to preferential preservation of the quartz eyes. The granite is interpreted to be Late Cretaceous based on an 85 ± 3 Ma Rb-Sr muscovite-whole-rock age (White, 1988).

Gold mineralization at the Vulture Mine is concentrated within quartz veins and silicified rocks within the granitic sill and its Proterozoic wall rocks. Gold is present as native metal and electrum associated with pyrite, argentiferous galena, and minor chalcopyrite and sphalerite. There is a good correspondence between the abundances of silica, sulfides, and gold (White, 1988).

MIDDLE TERTIARY ROCKS

Middle Tertiary rocks are most widespread east of the mine, where they form a belt of volcanic rocks that strikes north to north-northwest and is vertical to steeply east dipping. The volcanic sequence includes, from bottom to top, (1) mafic flows and associated feldspar-phyric rhyolite, (2) yellowish-weathering tuff and altered rhyolite flows, and (3) phenocryst-poor rhyolite flows. In addition, dikes lithologically equivalent to the mafic flows and feldspar-phyric rhyolite flows intrude the Proterozoic rocks and Cretaceous granite.

The stratigraphically lowest Tertiary unit exposed consists of mafic (basaltic to andesitic) flows that crop out directly to the east of the crystalline block that hosts the Vulture mineralization. Similar mafic flows occur near the base of the Tertiary section throughout the region (Capps and others, 1985, 1986; Grubensky and others, 1987; Stimac and others, 1987). Adjacent to the Vulture Mine, the contact between the mafic flows and the underlying crystalline rocks is not exposed; although it could be a fault, it is probably a slightly faulted(?), steeply dipping depositional contact. Mafic dikes similar in lithology to the flows are present within the Proterozoic and Cretaceous crystalline rocks.

The mafic flows and dikes are locally associated with pinkish-gray rhyolite containing as much as 5 percent phenocrysts of feldspar and minor quartz. The rhyolite consists largely of dikes that occur along the center or margins of the mafic dikes. In some exposures, the rhyolite contains irregularly shaped inclusions of the mafic dike. Assimilation of similar mafic material into the rhyolite has locally produced an intermediate-composition rock (andesite or dacite?). Phenocrysts from the rhyolite are likewise locally incorporated into the mafic dikes. In all, these relations imply that the rhyolitic and mafic magmas were intruded synchronously and interacted while molten. A texturally similar rhyolite with abundant mafic clots occurs as a fault-bounded klippe in the eastern part of the map areas and is probably a flow rather than a dike.

The basaltic to andesitic flows are depositionally overlain by a sequence of yellowish to cream-colored, yellowish-gray-weathering lithic tuff and altered, phenocryst-poor rhyolite and vitrophyre. These rocks are slope forming and probably correlative with the San Domingo rhyolite of the eastern Vulture and Wickenburg Mountains (Grubensky and others, 1987; Grubensky and Reynolds, 1988).

The sequence of yellowish-weathering tuffs and flows is overlain by at least two flow-banded rhyolitic flows, both of which contain less than one percent feldspar phenocrysts. The stratigraphically lowest flow is creamy gray to pinkish gray and somewhat granular in texture, whereas the overlying flow is pinkish-gray to maroonish-brown weathering and contains abundant silica-filled lithophysae. Vitrophyre is commonly preserved along the base of the lower flow.

MIDDLE TERTIARY STRUCTURES AND TILTING: IMPLICATIONS FOR MINERALIZATION

Middle Tertiary normal faulting and tilting has widely affected rocks of the area, including those that host the Vulture mine. The Tertiary volcanic belt has been tilted approximately 90 degrees, so that it now strikes north to north-northwest and is nearly vertical, with the top of the section facing to the east. The volcanic section is cut by several west- to southwest-dipping, low- and high-angle normal faults. These faults consistently place stratigraphically higher units westward over lower units. Analogous faults are present within the pre-Tertiary crystalline rocks but are more difficult to follow due to poor exposure and the lack of distinctive marker units. A major, poorly exposed, low-angle(?) normal fault places the

volcanic section down against Proterozoic rocks at the south end of the volcanic belt (along Vulture Mine Road near the northern edge of section 31).

Although the contact between the main volcanic sequence and the pre-Tertiary crystalline rocks that host the Vulture mine is not exposed, it is likely that the crystalline rocks, and the gold-bearing quartz veins, have undergone the same 90 degrees of rotation as the volcanic rocks. If so, then the Vulture granitic sill and vein have been tilted onto their side, and the highest preserved levels of the original mineralized system are at the present east end of the deposit. Restoring the volcanic section to its original subhorizontal attitude would bring the presently north-dipping Late Cretaceous granitic sill and veins into a near-vertical, east-northeast-striking orientation, which is typical for Late Cretaceous intrusions and veins in the region.

ACKNOWLEDGMENTS

We thank Carole A. O'Brien and John Osborne for access to the Vulture Mine area and George Allen and John Proffett for sharing their observations of the area.

REFERENCES CITED

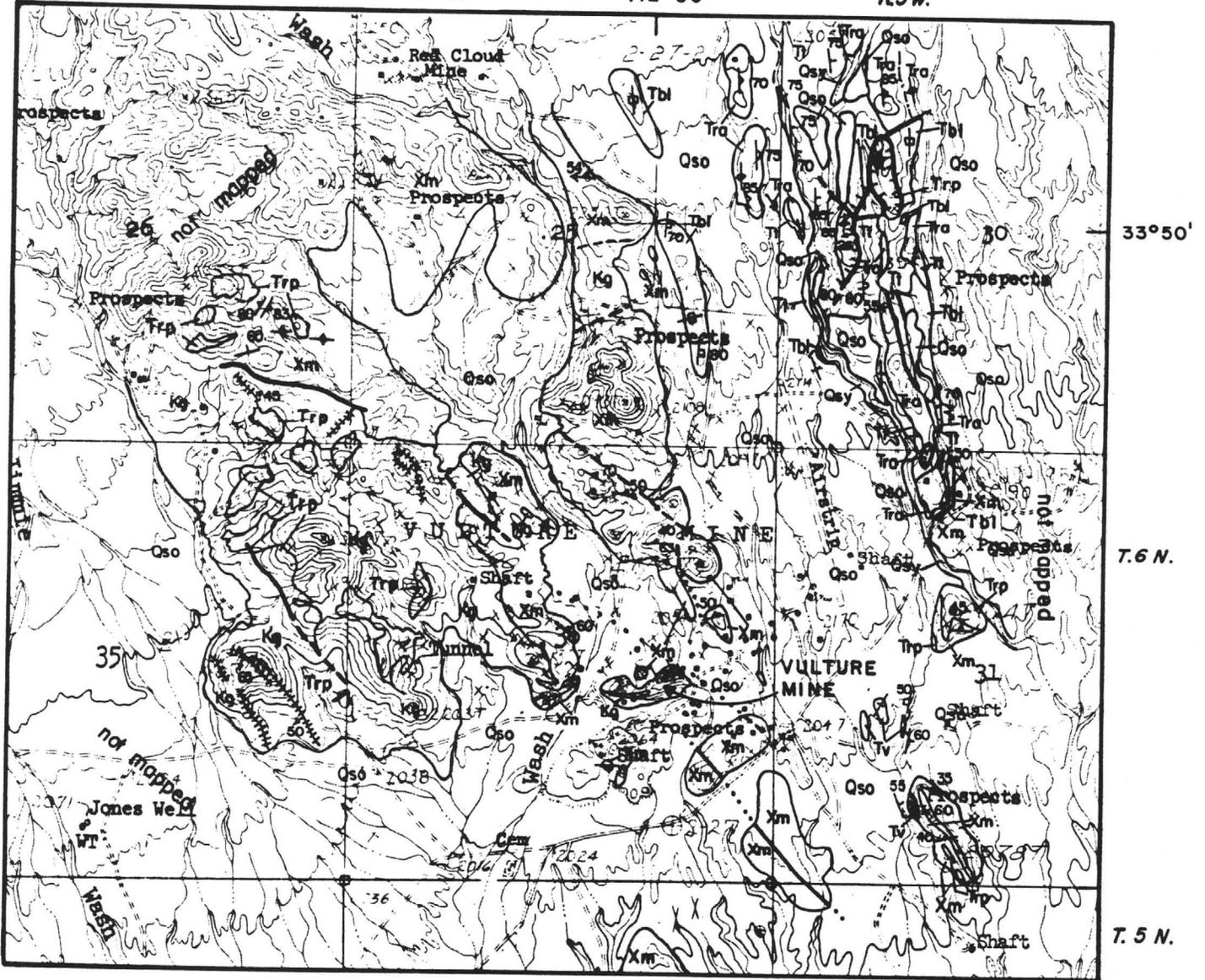
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- Rehrig, W.A., Shafiqullah, M., and Damon, P.E., 1980, Geochronology, geology, and listric normal faulting of the Vulture Mountains, Maricopa County, Arizona, *in* Jenney, J.P., and Stone, Claudia, eds., *Studies in western Arizona: Arizona Geological Society Digest*, v. 12, p. 89-110.
- Stimac, J.A., Fryxell, J.E., Reynolds, S.J., Richard, S.M., Grubensky, M.J., and Scott, E.A., 1987, Geologic map of the Wickenburg, southern Buckhorn, and northwestern Hieroglyphic Mountains, central Arizona: Arizona Bureau of Geology and Mineral Technology Open-File Report 87-9, 13 p., scale 1:24,000.
- White, D.C., 1988, *Geology of the Vulture Mine, Arizona: Society of Mining Engineers Preprint 88-44*, 5 p.

MAP UNITS

- Qsy -- sand and gravel in active channels (Holocene)
- Qso -- surficial deposits (Pleistocene to Holocene)
- Tv -- Volcanic rocks, undifferentiated (Early Miocene?)
- Tra -- aphyric rhyolite (Early Miocene?)
- Tt -- tuff and altered rhyolite (Early Miocene?)
- Trp -- feldspar-phyric rhyolite (Early Miocene?); includes mafic rocks in most dikes
- Tbl -- lower basaltic and andesitic flows (early Miocene? or late Oligocene?)
- Kg -- granite (Late Cretaceous)
- Xm -- metamorphic rocks (Early Proterozoic)

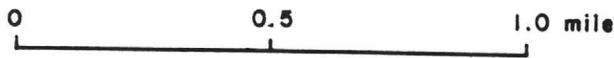
MAP SYMBOLS

-  contact; dashed where approximately located
-  fault; dashed where approximately located; dotted where covered
-  low-angle normal fault; dashed where approximately located; dotted where covered
-  marker unit
-  dike; showing dip
-  bedding
-  vertical bedding
-  overturned bedding
-  foliation with lineation
-  vertical foliation
-  overturned flow foliation
-  joints in unit Tbl; probably parallel to flow layering
-  vertical joints in unit Tbl; probably parallel to flow layering



BASE FROM WICKENBURG
2SE., ARIZONA, U.S.
GEOLOGICAL SURVEY,
1961

Scale 1:24,000



CONTOUR INTERVAL 20 FT.
DATUM IS MEAN SEA LEVEL



GEOLOGIC MAP OF THE VULTURE MINE AREA, VULTURE MOUNTAINS, WEST-CENTRAL ARIZONA

by

Stephen J. Reynolds, Jon E. Spencer, Ed DeWitt, Don C. White,
Michael J. Grubensky

M E M O

TO: Ron Short, Carole O'Brien, Anthony Budge
FROM: Don White
DATE: July 21, 1988
SUBJECT: Silver Queen submittal

I have studied the Silver Queen silver-bearing quartz vein at Carol's request, on behalf of Budge. Unless you're interested in the whys and wherefores, read no further, for there is nothing there of much potential.

I visited the property, ten unpatented claims south of Goodwin in the Bradshaw Mtns (see claim notices, map) in the company of two of the three claimants, on Sunday, July 10, 1988. The two claimants there were:

Ben Goldman; used car salesman
Classic Auto Sales
510 E. Dunlap
Phoenix, AZ 85020
(602-997-7207)

Jewell (Tex) Liles; realtor
West USA Realty
11022 N. 28th Dr.
Suite 170
Phoenix, AZ 85029
(Res: 602-848-8118)

The third claimant is:

Brooks W. Copeland; retired miner, prospector
130 S. Rush St.
Prescott, AZ 86303

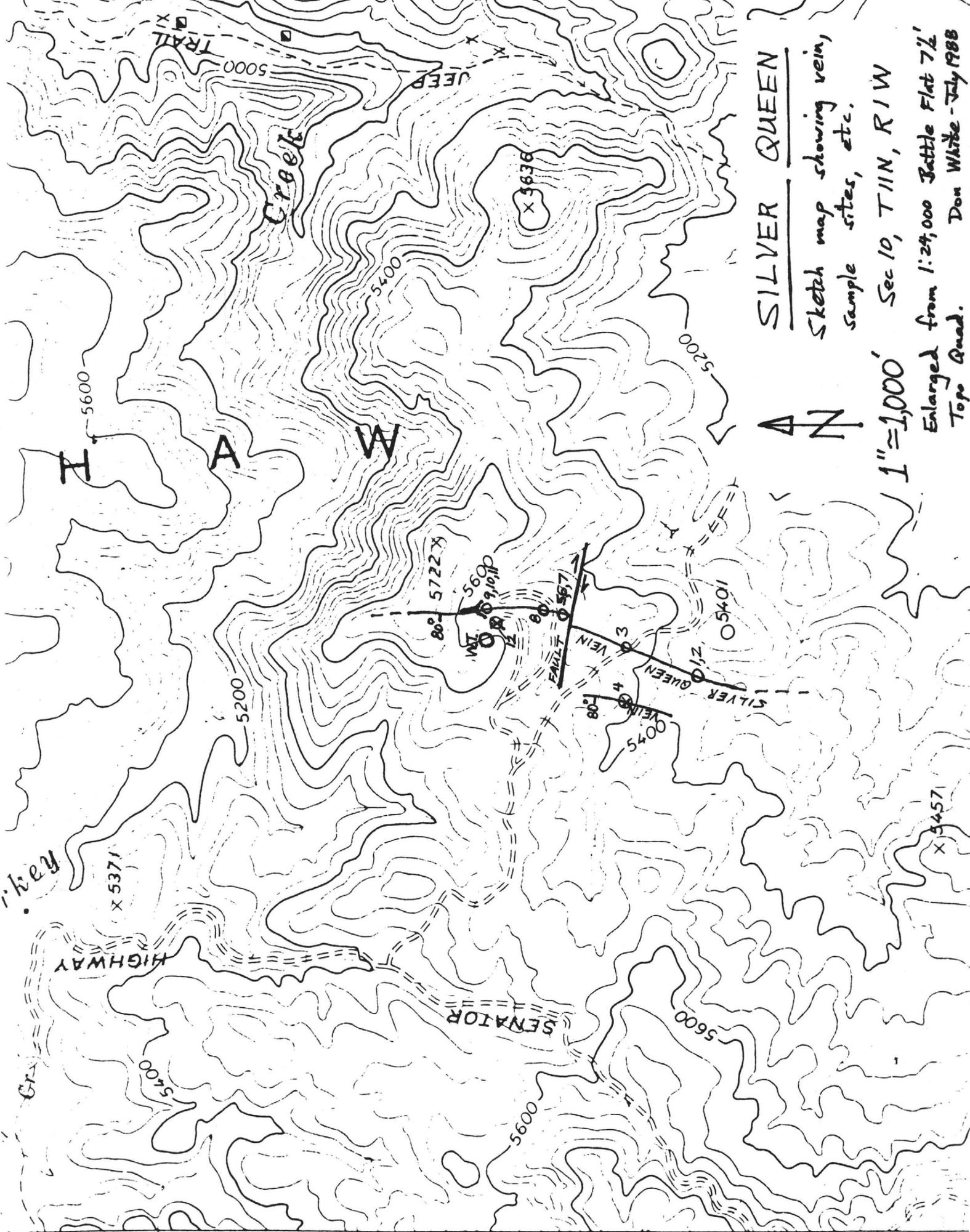
Mr. Goldman and Mr. Liles are both in their late 60's while Mr. Copeland must be late 80's. They have jointly held the claims some eight years and are getting too old to have much further interest in them. Ben Goldman says they're "asking \$150,000." for outright sale of the claims.

Goldman and Liles led me to the claims and showed me the highlights of the workings. They could produce no maps, no reputable assays (two certificates attached, both by "flukey", long-since-closed assay businesses) and clearly had no understanding of the geologic or economic (in)significance of what they were showing.

I stayed several hours after Goldman and Liles short visit so as to walk out the length of the vein, traverse in search of parallel veins, and to sample where appropriate. The attached sketch map shows sample sites by number, with assays and sample descriptions also attached.

The more determinative observations are:

- 1) There is no silver or gold to speak of.



SILVER QUEEN

Sketch map showing vein,
sample sites, etc.



1" = 1,000' Sec 10, T11N, R1W

Enlarged from 1:24,000 Battle Flat 7 1/2'
Topo Quad. Don White - July 1988

RAY
HIGHWAY

X 5371

Creek

JEEP TRAIL

X 5722

X 5690

X 9101

X 5677

X 5045

SILVER QUEEN

SENATOR

X 5457

ROCKY MOUNTAIN GEOCHEMICAL LABORATORIES

519 North Washington Ave.

PRESCOTT, ARIZONA 86301

Phone: 445-4393

*Same address
in '88 phone directory - Edwin A. Johnson*

*445-9693 in '88
phone book
(DCW)*

CHEMICAL ANALYSIS CERTIFICATE

Date February 13, 1979

Page 1 of 1

Client Tex Lyles

Submitted by T. Lyles

Date Received 2/10/79

Report on 4 Rock Samples

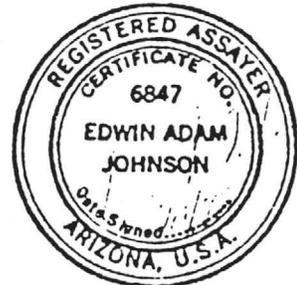
Analysis SILVER, GOLD

Remarks Atomic Absorption method used.

SAMPLE NO.	(Troy Oz. per Ton)	
	SILVER	GOLD
#1	0.18	0.01
#2 ✓	0.45	0.70 $\frac{3}{4}$
#3 ✓	51 ✓	0.01 $\frac{1}{2}$ spec 1% $\frac{1}{2}$ L.C. ~0.5% Cu ~1%
#4	0.30	0.07

Lower adit

4 samples @ \$ 3.50 ea. . . . \$ 14.00



All values are reported in parts per million unless specified otherwise. A minus sign (—) is to be read "less than" and a plus sign (+) "greater than." Values in parenthesis are estimates. This analytical report is the confidential property of the above mentioned client and for the protection of this client and ourselves we reserve the right to forbid publication or reproduction of this report or any part thereof without written permission. 10,000 ppm = 1% 34.3 ppm = 1 Troy Oz. per Ton

Hugh S. Thomas

Fred L. Copeland

MONEY METALS ASSAY OFFICE

306 South Montezuma Street
Prescott, Arizona 86301
Telephone (602) 445-8206

No longer in business! (DCU)

Custom Ore Assaying

10-9-80

Ariz. Reg. No. 8245

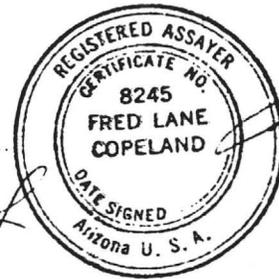
Mr. Ben Goldman
Prescott, Ariz.

Results of Determinations:

Silver Queen Schist:

Gold: 0.912 troy ounces per ton

Lower edit



STATE OF ARIZONA, County of Yavapai—**20364**
 on JUL 7 80-3 12 PM the within instrument was filed and recorded at the request of Ben Holdman
 o'clock Book 1308 Official Records Page 741
 Records of Yavapai County, Arizona. WITNESS my hand and official seal the day and year first above written.

PATSY C. BENFIEY, County Clerk
 By [Signature] Deputy

NOTICE OF MINING CLAIM LOCATION

Plat of the Silver Queen #2



- Lode Claim
- Placer Claim
- Millsite

3' each

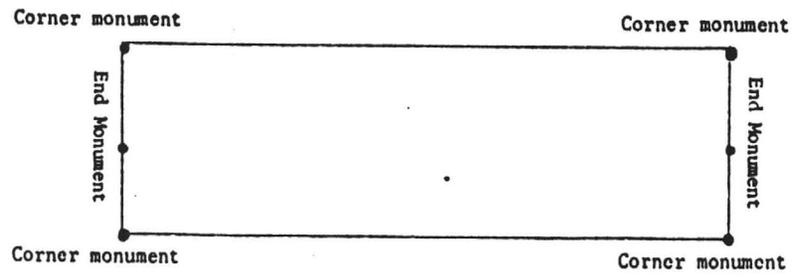
MAP OF SECTIONS



This Claim is 1500 feet in length and 600 feet in width, 300 feet on either side of the center line of the claim, forming a claim in the shape of a parallelogram. The general course of the claim is westly to southwesterly. This notice is posted at the west corner of the claim, which location monument is in Section 10, Township 11 N., Range 1 W.. The claim is in the Battle Flat mining district approximately 5 miles e. from Goodman, Arizona in Yavapai County.

Return to 5

Date posted 6 Day of June, 1980.
 Locator Name Ben Holdman & Jewell Silver & Placer
 Locator Address 130 So. Rush Prescott, Ariz 86301



STATE OF ARIZONA, County of Yavapai—
 I do hereby certify that this instrument was filed and recorded at the request of Ben Goldman
 on JAN 23 81 - 8 20 PM o'clock Book 1354 Official Records Page 809-810
 Records of Yavapai County, Arizona. WITNESS my hand and official seal the day and year first above written.

PAITY S. JENNEY, County Recorder
 By Barbara Clapper, Deputy



When received mail to:

Witness my hand and official seal the day and year first above written.
 By _____

Fee: \$

NOTICE OF MINING CLAIM LOCATION

- 1. Location Amendment Relocation
- 2. Placer Lode Millsite Tunnelsite

3. The name and address of the Locator is
Ben Goldman & Jewel Silver
 Name B. W. Cleveland
130 So. Rush
 Address
Prescott City Ariz. Zip 86301

4. The name of the claim is Silver Green #11.

5. The date of the location is 12-15-80

6. The claim is 1500 feet long and 602 feet wide. The distance from the Location monument to each end of the claim is 300 feet in a E. W. direction and 1500 feet in a N. S. direction.

7. The general course of the claim is from the north to the South

8. The location of the claim is in Section 10, Township 11 N., Range 1 W.
 G&SRB&M Jubay Peak Mining District Yavapai County, Arizona.

9. If amending or relocating, the previous claim name was _____
 _____ recorded in Docket _____, Book _____
 _____ Mining District, _____ County, Arizona.

10. The location of the claim with reference to a natural object or permanent monument is _____

Date 12-15-80

BOOK 1354 PAGE 809

Ben Goldman
 Signature

MAP OF MINING CLAIM LOCATION

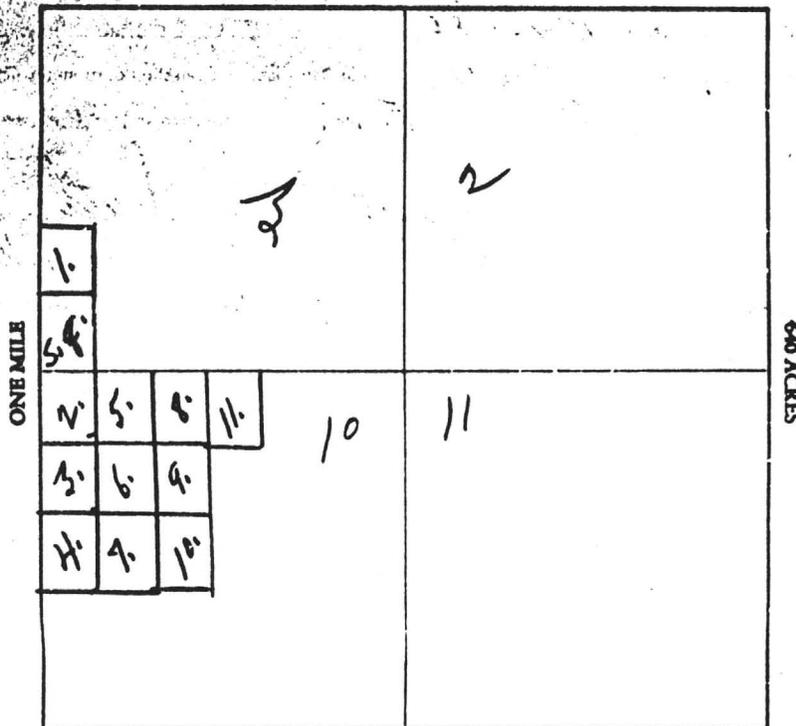
1. The name of the claim is Silver Queen #11
2. The _____ corner of the claim is _____ feet in a _____ direction to a survey monument or permanent natural object described as _____
3. The type of location monument is RX 2
The type of corner and end monuments are 2x2
4. The bearing and distance between the corners of the claim are beginning at the N.E. corner of the claim, 600 feet in a Westerly direction to the N.W. corner, then 1500 feet in a Southwesterly direction to the S.W. corner, then 600 feet in a Westerly direction to the S.E. corner, then 1500 feet in a Southerly direction to the point of beginning.

MAP

One inch = One thousand feet

North Arrow 

ONE MILE



Section 10 Range 1. W. Township 11. N. G&SRB&M

Date 12-15-80

BOOK 1354 PAGE 810

Tom Galbraith
Signature

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

May 30, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
A.F. BUDGE (MINING) LTD.
4301 N. 75th Street
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Accompanying are my statements for minor work on the U.V.X. and Vulture during May, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
Vulture	\$420.00	\$76.30	\$496.30
U.V.X.	<u>420.00</u>	<u>70.40</u>	<u>490.40</u>
TOTALS	\$840.00	\$146.70	<u>\$986.70</u>

I trust the Vulture I.P. work is completed and that you are acting on its findings. If I may contribute to that effort this fall I shall be happy to. Until August or so I am pretty fully committed to a Nevada project.

Ron tells me to nix the Vulture fault extension study; that he has you all convinced it can't be economic anyway! I can't refute his logic if the numbers he uses for the assumed discovery are accepted. Financial analyses on undiscovered deposits, however, are rather disturbing to me. If your wishes change again and it becomes worth doing, simply let me know.

Ron wanted me to look briefly at what one sees in the UVX 902 stope (I prefer to call it the Morgan body which is what it was dubbed when drilled and defined). I spent one day inspecting and photo-documenting the geology there and also in the 950-to-800 raise. A memo on that is accompanying.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

Ron

M E M O

TO: Ron Short, Carole O'Brien, A.F. Budge
FROM: Don White
DATE: May 30, 1989
SUBJECT: UVX 800 raise and the possibility of a substantial 809-9 orebody

The new escapeway raise from the 950 level to the 800 level, subparallel to the old Morgan Winze, reveals clues to what lies just NW of that raise. The so-called 809-9 auriferous silica body lies just behind the footwall of the raise. Its bottom probably occurs about the elevation of the small grit intercept 40 feet above the 950 level. That would be the site to drift out along the grit to test its plan dimensions. A raise from the 800 level in grit (as per my Sept. 1988 1" = 20' plan) could test the vertical continuity. A substantial high-silica, low iron, 0.2 oz/t Au, 1.0 oz/t Ag body appears likely. One would have to make such a body economic through choice of mining plan and by efficient management.

Ron has requested a report from me defining remaining reserves in light of current production and geological understanding. I need some documentation of what that production and geologic knowledge is in order to apply it. If John McKenney or anyone else can compile production statistics then I shall be happy to calculate remaining drill indicated reserves. And if the present state of geologic knowledge can be documented at all I shall apply it to other areas to propose sites for further exploration potential. Either way, the geologic documentation of what has been produced and substantially developed in the 902 and 809-4 areas is crucial to any further efforts.

I look forward to either receiving such information from John McKenney or being allowed to compile it as part of the project. Please let me know which to plan on.

DW:sk

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

December 6, 1988

Paul A. Handverger
VERDE EXPLORATION, LTD.
2160 Old Jerome Hwy.
Clarkdale, AZ 86324

Dear Paul,

Thank you for your prompt response in approving the manuscript draft sent a couple weeks ago. The presentation went very well and was received with much interest by about 800 persons at the N.W. Mining Convention. That can not but help Verde's property position in the long term.

The NWMA officer there tell me the manuscripts become available as individual papers in March or so. They do not put together a proceedings volume as such. There was some discussion of collecting the papers from the two symposia on precious metals in and with Precambrian rocks and massive sulfides into a special paper. In that event Bob Hodder and I would probably rework the manuscript at least once again and have you see it before final submittal to the editors.

Accompanying is the version as presented to NWMA last week.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosure

cc: Robert W. Hodder
Carole A. O'Brien
Ronald R. Short ✓

R.R.S.

Don White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

December 30, 1988

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
A.F. BUDGE (MINING) LTD.
4301 N. 75th St.
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

Enclosed are my December statements for work on six projects, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
U.V.X.	\$ 902.50	\$ 178.38	\$1,080.88
Vulture	950.00	35.40	985.40
Ash Peak	427.50	24.00	451.50
Plain View	190.00	5.20	195.20
Oatman	71.25	42.00	113.25
Golden Hillside	<u>71.25</u>	<u>12.77</u>	<u>84.02</u>
TOTALS	\$2,612.50	\$ 297.75	<u>\$2,910.25</u>

Accompanying is my memo on Vulture exploration possibilities. Let me know if I may proceed with the structural analysis and data compilation and/or the convasing of geophysicists.

Also accompanying, and provided separately to John McKenney at U.V.X., are the plots of 809-area metals distributions.

I hope to get to the Golden Hillside property for an evaluation as soon as time allows, maybe January.

Because of demands on my time and trends in the industry, my fee will increase to \$210./day effective February 1, 1989.

I'm pleased to hear the recoveries of gold from the Plain View tailings are respectable in a column leach test. Seems to me that project has some goodly chance of being made a winner. If the search for other auriferous tailings reserves is desireable, I recommend we talk about my conducting a systematic review of records, publications, and claim or land status for those districts or states you are willing to consider. I could then proceed directly to properties and get hand auger samples for analysis. We might turn up another Plain View or better.

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
December 30, 1988
Page Two

Best wishes for 1989; may a number of prospects become your gold mines!

Regards,

A handwritten signature in cursive script that reads "Don". The signature is written in black ink and is positioned below the typed word "Regards,".

Don White
Geologist, C.P.G.

DW:sk

Enclosures

Carole

Don White
521 E. Willis St.
Prescott, AZ 86301
602/778-3140

May 31, 1988

Anthony F. Budge
Carole A. O'Brien
A.F. BUDGE (MINING) LTD.
7340 E. Shoeman Ln.
Suite 111-B-(E)
Scottsdale, AZ 85251

Dear Tony and Carole,

Enclosed are my May statements for work on the U.V.X. and Vulture projects, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
U.V.X.	\$3,325.00	\$246.15	\$3,571.15
Vulture	<u>1,710.00</u>	<u>297.48</u>	<u>2,007.48</u>
TOTALS	\$5,035.00	\$543.63	<u>\$5,578.63</u>

Thus my total bill for May, 1988 is \$5,578.63.

May started out with the U.V.X. reserve calculations following Bob Hodder's visit, culminating in my memo of May 6th. Then we broke through with the 906 dog-hole raise to the 903-N drift. The accompanying memo and plan describe the outcome of mapping and sampling there.

Just as I was about to get down to work on U.V.X. level plans, several days became devoted to orienting the new site managers, Ron Short and Dale Allen, to the Vulture and U.V.X. projects. Time has also been spent reproducing files for Ron and Dale to have at their respective projects. Then Carole requested my involvement with the Vulture tailings review preparatory to their excavation. My summary on that, prior to any field work but just by reconciling others' data, was forwarded in memo plan, and reserve chart form May 27th.

The two major activities pressing right now are the Vulture tailings hand augering to delimit actual bounds of excavation and the U.V.X. 809 area plan compilation. The latter is imperative since work may commence there soon, what with the transfer raise virtually complete.

During early May I compiled U.V.X. 911-area plans on 40-foot intervals to allow more accurate reserve calculations there but, again, the 809 area plans are still pending (of course they were all done a year ago but need redoing to correct for surveying errors and to improve to overall 1"=20' scale). Other activities I did not have time to get to in May are the inspection of Verde's core for areas peripheral to the U.V.X., or the commencement of any direct dealings with the smelter folks.

Anthony F. Budge
Carole A. O'Brien
May 31, 1988
Page Two

*changed to four days
none on ore reserves*

Vulture tailings sampling and U.V.X. 809 plans will be the priority in June. Bob Hodder will hopefully have about ten days to give us in latest June, at which time we'll update the 809 and 911 area reserve calculations, review the case for supergene gold concentration, and hopefully have a couple days to check for field evidence of supergene silicification (with attendant copper and iron oxides and gold) to the south of Jerome.

As much as I would like to carry out the negotiations with the smelters regarding terms of sale of U.V.X. auriferous silica flux and gold ore, if my other responsibilities preclude that, I recommend someone else get at it. I believe those dealings will be crucial to the success of the U.V.X. project and that their timeliness is of the essence.

Yours, as always,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

6/7/88
12:00 noon

Don White.

- 1) Complete Vulture sampling of tailings and stake area for excavation
- 2) Do not need to massage ore reserve calculation need to contour location of ore blocks on 8 level of 809 stoping area, for planning purposes.
Reaffirm location of Morgan area ore
- 3) Verde exploration drill holes, exploration outside of UVX mine.
Estimation of time.
Bob Hodder's involvement.
4 days with Bob Hodder

Discussion 6/7/88 Don White

- 1) Vulture - Samples completed by June 10.
Then wait for results: results should be in by 7/1/88 - then complete contouring of excavation area.
- 2) Agreed not to redo reserve calculations in 809, and 911 area. What we have are sufficient.
- 3) We do need location of 809 ore body with respect to 800 level for planning purposes.

4) Bob Holder will not be used for reserve calculations. We will use him 4 days toward the end of July. One day for Bob and Don to examine core from Verde drilling, 2 days for surface exploration along strike of Verde fault, 1 day to go underground at UVX mine, examine new areas opened.

5) Told Don to address correspondence to me (Ron Short) regarding his work. Told him not to start any new projects without first discussing it with myself.

6) All agreed to.

Ron Short - U.V.X.

M E M O

TO: R. Short, C.A. O'Brien, A.F. Budge
FROM: Don C. White
DATE: June 14, 1988
SUBJECT: Outside studies being done related to U.V.X.

Several studies are now in progress or pending that could substantially advance our understanding of the U.V.X. mineralization and thus aide in finding more.

One avenue of study is the X-ray diffraction and scanning electron microscopy expected to be done by Asst. Prof. Holly Huyck and one of her graduate students at the University of Cincinnati. That will hopefully identify the iron minerals in select 902 and 911 area samples and allow us to determine the conditions of deposition of that iron. We feel that may be a critical clue in determining the conditions of deposition and hence origin of the precious metals.

If possible, Bob Hodder is trying to arrange for some oxygen isotope work on the Verde area silica. Like with the iron, knowing the conditons of formation of the silica may be very revealing. With any luck, the oxygen would be unequivocally meteoric or magmatic and lead us to the proper conclusion as to what kind of silicification we are dealing with. We hope that the oxygen work and iron mineralogy work complement each other.

There will inevitably be some monetary cost to both these studies if carried far enough. Holly is able to run most of the XRD work free within her department as part of the student's study but the SEM work will require some subsidy. We will know the SEM cost and how much of it could be usefull, when the XRD work is completed. A cap of \$500.00 has already been communicated to Holly on that, though I'd like to think that if it's very useful we could increase that.

Bob Hodder will have some news on the oxygen work and its costs later this month. There's no getting around the high cost of sophisticated laboratory work but I think its worth pointing out that the sample acquisition cost over \$500,000. in direct drilling costs alone. Thus even a \$5,000 expense now is less than a one percent add-on to the sampling cost. It sure would be tragic to spend 99% on a program and then economize to such an extent that the samples sit in core boxes and conclusions aren't drawn for lack of the final one percent. Expenditures of a few thousand dollars will position us to find whatever possibly remains within the present lease boundary, to evaluate the merits of exploration for similar targets on Verde or P.D. ground, and to do so most cost effectively, by using our intellect to the maximum and thereby saving on expensive drilling costs. Realize that even a few percent savings on drilling costs more than pays back the cost of a little geochemical or petrographic work.

Some other studies include Tom Nash's petrographic work at the U.S. Geologic Survey in Denver. His feedback has already been very useful, at no cost to Budge other than a little of my time for sample collecting and transmittal.

R. Short, C.A. O'Brien, A.F. Budge
June 14, 1988
Page 2

Jim Bussman, U. of Arizona M.Sc. candidate, has been delayed in his petrographic work by courses and summer work. His work has cost less than \$100 thus far, with a promise of about \$500 analytical fees reimbursed if they are useful to the project.

The largest out-of-pocket costs lately are the roughly \$1,000 for nuclear activation analyses by Bondar-Clegg & Co. Ltd. of Vancouver on select 902 and 911 area samples. Those costs were committed in March with Carole's approval, same as for about that amount again for 809 area samples only recently sent off. The utility of the INAA data is multiple; as check assays, as iron analyses for flux evaluation, and as a check for other elements that could be useful tracers of the precious metals and/or help us understand some of its why and wherefores. The INAA data received thus far has been very revealing, as summarized in another memo (D.C. White, June 14, 1988).

Lastly, Bob Hodder and I were asked in late April whether we could present what is known about the U.V.X. precious metal distribution and genesis in relation to the base metal deposits, to the Northwest Mining Convention in Spokane, Washington on November 30th of this year. Already having Carole's approval for Budge and that of Paul Handverger for Verde, we plan to attend and speak there. A draft paper will be submitted to both parties for approval before that time. There is no cost to Budge for our travel to or attendance at that meeting.

DW:sk

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
602/778-3140

June 30, 1988

Anthony F. Budge
Carole A. O'Brien
A.F. BUDGE (MINING) LTD.
7340 E. Shoeman Ln.
Suite 111-B-(E)
Scottsdale, AZ 85251

Dear Tony and Carole,

Enclosed are my June statements for work on the U.V.X. and Vulture projects, summarized as follows:

<u>PROJECT</u>	<u>FEES</u>	<u>EXPENSES</u>	<u>TOTAL</u>
U.V.X.	\$3,847.50	\$465.44	\$4,312.94
Vulture	<u>1,377.50</u>	<u>328.23</u>	<u>1,705.73</u>
TOTALS	\$5,225.00	\$793.67	<u>\$6,018.67</u>

Thus my total bill for June, 1988 is \$6,018.67.

This month finally allowed time for compilation of the U.V.X. 809 area drill sections (5) and level plans (6). A set of them is accompanying for each of you and has already been given to Ron Short and Pete Flores for their use. Each of the main levels in that area (950, 903, 800, 700) is about 80 feet above its neighbor. Thus, eventually for reserve calculation purposes I shall need to compile at least intermediate plans on 40-foot intervals above each of those levels. But that can wait until we are out on the new crosscut headed south from the 809 D.D.S. and gain access to one or more of the mineralized bodies.

U.V.X. items compiled and sent earlier this month included the Bitter Creek geochemistry and the trace element data (statistics and cross sections) for the 902 and 911 areas. Select 809 area samples are now being run by Bondar-Clegg and will provide a very useful comparison to the other areas.

I spent most of one day inspecting the two Anaconda cores (AV-10 and 27) and Anglo-American core (B-1) from holes just north and east of the U.V.X. This was followup to Paul Handverger's proposal that Budge lease those areas as gold targets and R.W. Hodder's memo of April 30, 1988 with opinions on the merits of those targets. My inspection of the cores confirms Hodder's views that the gold occurrences are all primary sulfide hosted, very unlike the U.V.X. Gold Stope-type targets. This, coupled with their low grade, exceeding depth and difficulty of exploration, makes them unattractive prospects.

Three of Bob Hodder's four days here this week were devoted to the district-wide reconnaissance for U.V.X.-like gold occurrences. When I have assays in

Anthony F. Budge
Carole A. O'Brien
June 30, 1988
Page Two

hand I shall pass along our thoughts.

Several days in early June were spent hand augering the fill-in and extension holes to evaluate the Vulture stamp mill tailings. Those assays are newly received and will be utilized during July to make an accurate plan of the grade distribution and calculate reserves. Old holes were recovered where possible and all new ones labelled. Once decisions are made as to cutoff grade, I can mark the actual limits of excavation on the ground.

Two submittals are pending. One is the Aztec tailings in Nevada which I passed on from REDCO with my memo of June 12th. Having talked with Joe Sandberg, a REDCO principal, I now have indications \$3,000 plus the evaluation I proposed would gain Budge a 90-day option on the property.

Carole has requested I visit the "Silver Queen" claims of Ben Goldman, et. al. in the Bradshaw Mtns. That is tentatively scheduled for July 10th.

During July, in addition to Vulture tailings reserves and plans and Silver Queen review, I shall try to wrap up the U.V.X. Morgan area plans (1" = 20'; 1100, 950, 903, 800, 700 levels) compile the 809 area geochemistry when it arrives, and monitor the 993 (S45°W from the 907 D.D.S.) and 890 (due S from the 809 D.D.S.) crosscuts.

Sincerely,



Don White
Geologist, C.P.G.

DW:sk

Enclosures

cc: Ron Short
Dale Allan

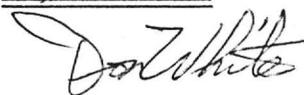
STATEMENT FOR GEOLOGICAL SERVICES

CLIENT: A.F. Budge (Mining) Ltd.PROJECT: U.V.X.PERIOD: June, 1988

Don White

521 East Willis St.
Prescott, AZ 86301
602-778-3140

	DATE	DAYS	MILES	LODGING	FOOD	OTHER	DESCRIPTION	ACTIVITY
	6-2-88	3/4	72			10.11	Clasp envelopes for pulp slides	File selections for JNAA, Core samples for XRD + petrography. Talk with Ron
	6-3	1	4			9.87	Film (slide + print) developing	Typing, duplicating, sorting, + shipping.
Sun	6-5	1/2	—			8.00	Typing	Plotting Bitter Creek geochem data.
	6-6	1	8			20.01	Sample freight ^{Londar-Clegg} _{U. Cincinnati}	Plotting 911 + 902 trace element geochem.
	6-7	1 1/4	4			5.83	pH testing paper (B-S)	809 Area (NW Verde Area) plans
	6-8	3/4	4			18.00	Coloring (3 hr. @ 6.)	" " " "
	6-13	1 1/4	4			9.62	Photo reprints ^{Bitter Creek} _{memo}	Memos, correspondence, + 809 plans
	6-14	1	8			16.00	Typing - geochem memos	Typing, dups, collating, sorting, + 809 plans.
	6-15	1	4			15.00	Coloring + photo mounting (1 1/2 hr. @ 6.)	809 plans + rough drill sections
	6-17	1	72					Checking off-lease core - AV-27, AV-10, B-1
Sat	6-18	3/4	—					809 drill sections
	6-20	3/4	4			8.80	Film	Ditto, + drafting, blueprinting, checking
	6-21	1	—					809 plans + reconciliation of sections
	6-22	1	4					Drafting, blueprinting, coloring + final 809 checks.
	6-23	1	76			24.00	4 hr. coloring (809 plans)	Coloring, 907 sampling + assayer, 809 plans + rec. U.V.X. sorting items in trailer
Sun	6-26	1 1/4	90	Med. w/ R.W.H.	18.00	83.00	June phone billing	(8am-6pm) Recon. of Garden Verde Camp location + Cadumet + Terrene properties
	6-27	1 1/2	100		5.00			(8am-8pm) Recon. of Green Mountain, Cliff + Copper Chief Properties.
	6-28	1 1/4	72			18.00	3 hr. coloring (809 plans)	(9am-7pm) Meet with Don Short, Recon. data gathering. U.G. with R.W.H.
	6-29	1 1/4	84			12.00	2 hr coloring (809 plans)	(7am-5pm) Recon. Columbia, Dandee, A+A + memo compilation. Assayer
	6-30	1	4					Recon. memo, Morgan plans, H. Huxley letter.
	TOTAL	20 1/4	614					
	RATE	190.	.30					
	\$	3,847.50	184.20	—	23.00	258.24	\$ 465.44	Total Expenses

TOTAL BILL: \$ 4,312.94


Geologist, CPG

Ron Short
U.V.X.

M E M O

TO: R. Short, C.A. O'Brien, A.F. Budge
cc: R.W. Hodder

FROM: D.C. White

DATE: June 14, 1988

SUBJECT: U.V.X. supergene metal transport evidenced by present Bitter
Creek geochemistry

It has long been observed that runoff from the United Verde Mine area is laden with copper. After storms, the streams flow turquoise color until they dry up. Indeed, copper precipitation on steel was practiced both beneath the U.V. waste dumps at the so-called 500-level warehouse, and at a small plant still standing below the UVX dump, probably by diverting Bitter Creek drainage through the concrete flume now gravel-clogged.

As Bob Hodder and I have come to be more suspect of the supergene role in U.V.X. gold occurrences, we deemed it worth some minimal sampling of Bitter Creek when it last flowed in April. We sampled the water, sludge, and sediment as per the accompanying plans (figures 1 and 2) and photos (figures 3 through 6).

What comes out of the analytical results is confirmation that the mildly acid mine drainage is carrying base metals, iron and probably precious metals. The sediments and ferricrete along Bitter Creek are laden with copper, lead, zinc, iron, and anomalous gold and silver. One can surmise that with all the geologic time the top of the United Verde deposit has been subject to erosion, great quantities of base and precious metals as well as iron and silica have been leached and redeposited down-slope.

Such activity has no doubt occurred for large portions of the last half billion years as we have the Cambrian Tapeats Sandstone resting upon the "Great Unconformity" just above the U.V. pit and at the 800 level of the U.V.X. We also have a Tertiary channel, filled with alluvial pebbles to boulders, cutting through the Paleozoic section all the way to the Precambrian.

We observe supergene chalcocite coatings on select clasts within the Tertiary conglomerate. Chalcocite-malachite-azurite copper mineralization was mined from the basal Tertiary conglomerate near the Verde Fault at the U.V.X. Beneath that we have our Verde target area silica body with a southeast plunge from the 809 bodies through the Morgan zone to the 911 zone at a position closest to the main copper orebody. There are lithologic and geochemical trends throughout that length which we are just now getting ahandle on with Iain Sloan's thesis work, the Bondar-Clegg analytical work, and the plan and section compilation.

Iain Sloan's thesis has already been passed along, a very well done piece of work. The plots, in section, for Bondar-Clegg data from the 902 and 911 areas are summarized graphically and statistically in a separate memo (D.C. White, June 14, 1988) and plans and sections are all roughed out at 1" = 20' scale though not yet drafted for the 809 area.

R. Short, C.A. O'Brien, A.F. Budge

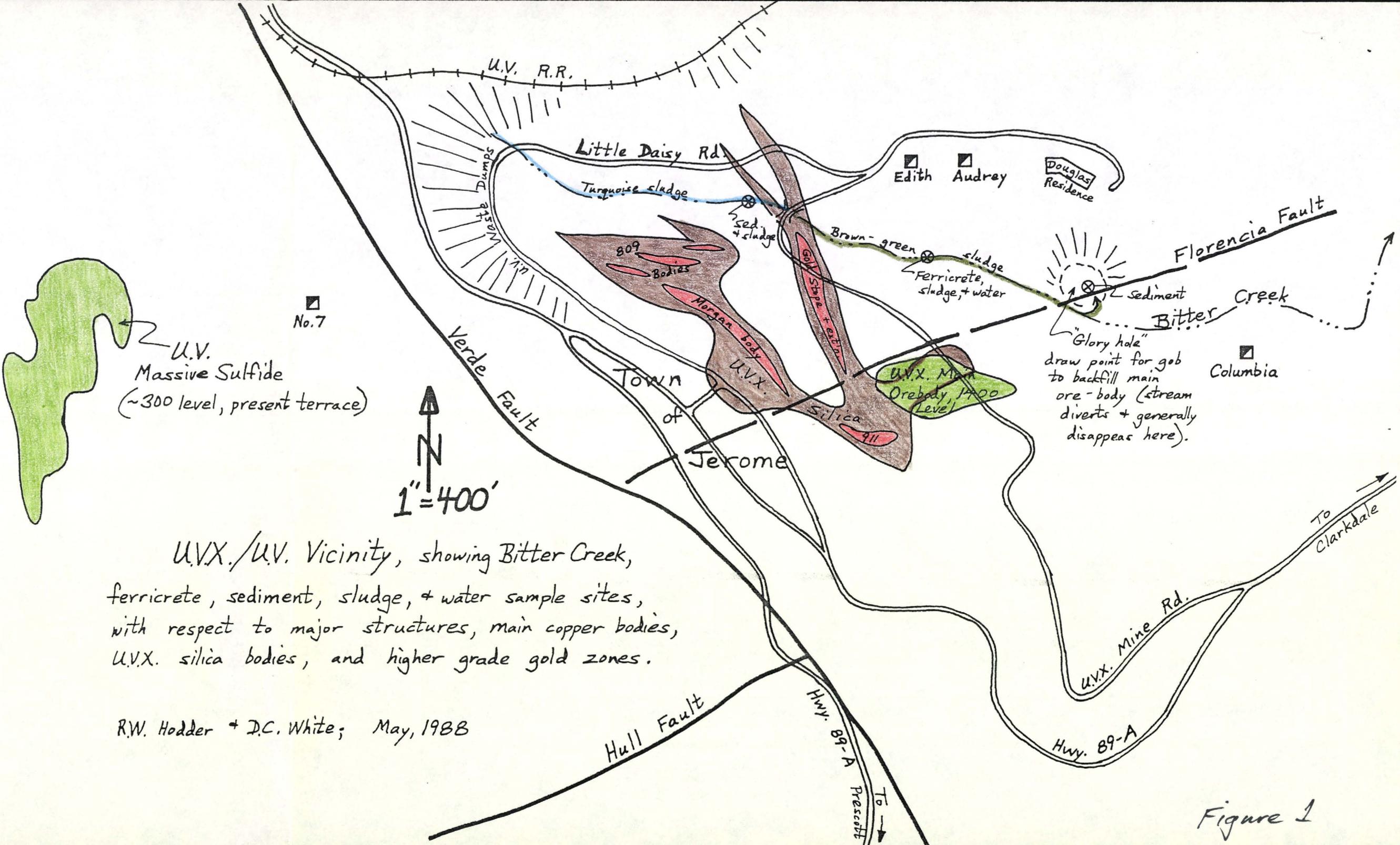
cc: R.W. Hodder

June 14, 1988

Page Two

I recommend we utilize the experience of Bob Hodder and the analytical help of Holly Huyck (Univ. of Cincinnati) to further understand and interpret these phenomena as they are real, empirical, trends which may well help find more mineralization at the U.V.X. or more like it in the district.

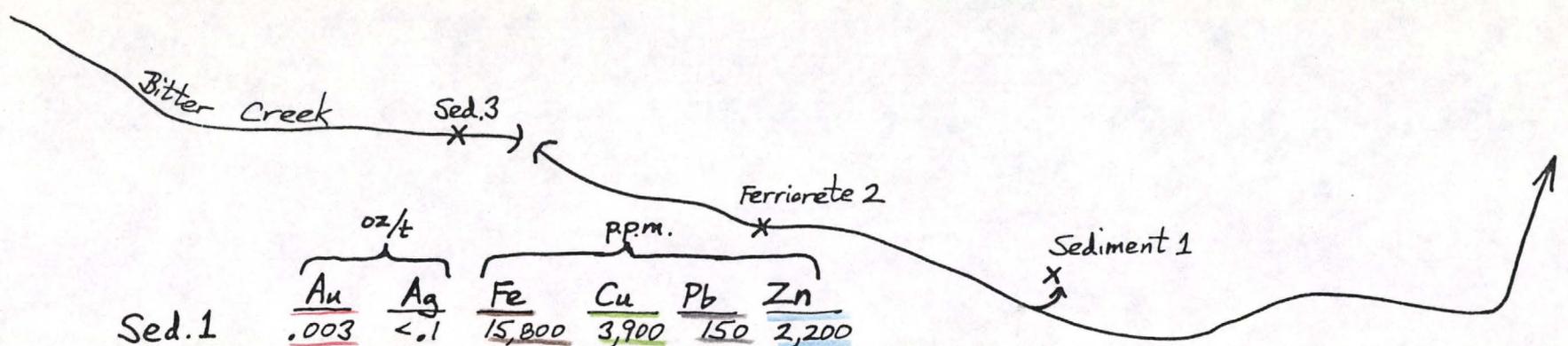
DW:sk



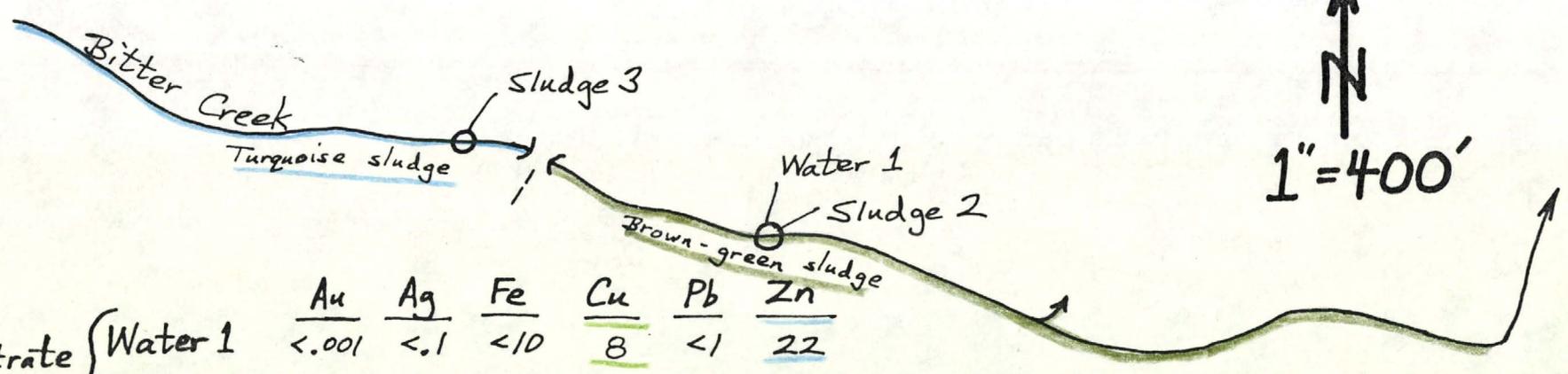
U.V.X./U.V. Vicinity, showing Bitter Creek, ferricrete, sediment, sludge, + water sample sites, with respect to major structures, main copper bodies, U.V.X. silica bodies, and higher grade gold zones.

R.W. Hodder + D.C. White; May, 1988

Figure 1



	oz/t		ppm.			
	<u>Au</u>	<u>Ag</u>	<u>Fe</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>
Sed. 1	<u>.003</u>	<.1	<u>15,800</u>	<u>3,900</u>	<u>150</u>	<u>2,200</u>
Ferricrete 2	<u>.008</u>	<.1	<u>14,600</u>	<u>1,700</u>	<u>1,100</u>	<u>1,900</u>
Sed. 3	<u>.005</u>	<.1	<u>15,800</u>	<u>9,500</u>	<u>250</u>	<u>3,000</u>



	<u>Au</u>	<u>Ag</u>	<u>Fe</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>
Filtrate Water 1	<.001	<.1	<10	<u>8</u>	<1	<u>22</u>
Sludge 2	<.001	<.1	<10	<1	<1	<u>20</u>
Sludge 3	<.001	<.1	<10	<u>32</u>	<1	<u>50</u>

pH of each ~6.5

Solids from filtering 2 sludge samples ~10% Fe, ~5% Cu

Results of analyses (A.A.) on Bitter Creek ferricrete, sediment, sludge + water samples

R.W. Hadder + D.C. White; May, 1988

Figure 2

Ron -

Previously approved by
AFB + CAD's
& now in progress -

June 28, 1988

MEMORANDUM

TO: D.C. White
FROM: R.W. Hodder
SUBJECT: Determination of relative abundance of isotopes of oxygen, in quartz and iron oxide minerals which are gangue to precious metals.

The Question - Can relative abundances of oxygen in gangue minerals indicate whether precious metals were deposited from ascending hydrothermal fluids of magmatic or metamorphic origin, as in primary chert, or from descending groundwater filling open spaces in the Verde fault zone?

The Relevance - If there is a means of discriminating primary from secondary quartz and iron oxides which contain precious metals it would help us anticipate and understand distribution of metals with respect to rock types, position relative to the pC-E unconformity and present surface. This would be very useful in planning, grade control, and planning future exploration.

The Problem - If there has been extensive downward percolation of groundwater, rocks may have equilibrated to present oxygen isotope abundances.

The Method - I have six samples from the 905-12 raise which cross the east mineralized zone on the 950 level, the southern extension of the Gold Stope. These include beige banded edge of the diorite, dark brown iron-rich rock, grey and white sugary rock, yellow sugary grit, brown vuggy rock, and grey clasts from the sugary matrix. Quartz and iron oxides will be separated and analyzed by mass spectroscopy.

Cost - I anticipate starting with quartz samples from yellow sugary grit and grey and white sugary rock plus iron oxide from brown vuggy rock. This will mean three samples at a total cost of approximately \$500.00. I will monitor the cost closely.

Ron /uvx

MEMORANDUM

June 29, 1988

TO: C.A. O'Brien and R. Short
FROM: R.W. Hodder and D.C. White
SUBJECT: Reconnaissance of Verde fault zone for UVX-type iron-silica-gold occurrences.

INTRODUCTION

Our present documentation of the UVX gold occurrence includes the following:

1. Brecciation in hanging wall of the Verde fault.
2. Gold within 300 vertical feet of the $\epsilon/p\epsilon$ unconformity
3. Quartz-rich and in an en-echelon array with the highest breccia zones cemented by quartz, malachite, azurite and average 0.06 oz Au/t, middle elevations breccias cemented by brown and red iron oxides, quartz and fickle gold grades and lowest elevation breccias cemented by yellow iron oxides, quartz and some of the best precious metals.
4. Down-drainage from base metal massive sulfide, averaging 0.03 oz Au/t or within the leached top of such a sulphide body.

The idea of this reconnaissance along the Verde fault is that the quartz, malachite, azurite breccias may have been mined in past times for their copper, silica, precious metal content, but the iron-rich breccias may not have been mined because the extremely fine gold would not have been noted in panning crushed rock, the usual precursor to assaying in the old days. In addition the lack of copper and abundance of iron made this less attractive as flux ore. And further, those were looked upon as gossans, that is, residual products of weathering and if there was not evidence of base metal content they were set aside. However, we interpret a progressive residual and transported enrichment at the $\epsilon/p\epsilon$ unconformity and downhill from protore as massive sulphide to produce a series of products at different elevations. This dependence on a multitude of variable for optimum concentration may not have been recognized by the previous prospectors.

METHODOLOGY

In this reconnaissance we examined dumps and old workings, and sampled where appropriate, from the Copper Chief south of Jerome to the Arkansas Arizona north of Jerome. This covers approximately five miles of fault strike length and ten major prospects. The traversing was also extended to faults sympathetic to the Verde Fault. These parallel faults raise Precambrian rocks to surface at two places: 1) the area east of Jerome between the Verde and Bessie faults and downstream on Bitter Creek from the UVX and 2) the area of the Green Monster to the south of Jerome.

INITIAL FINDINGS

1. There are several sites where the characteristics of the UVX iron-silica-

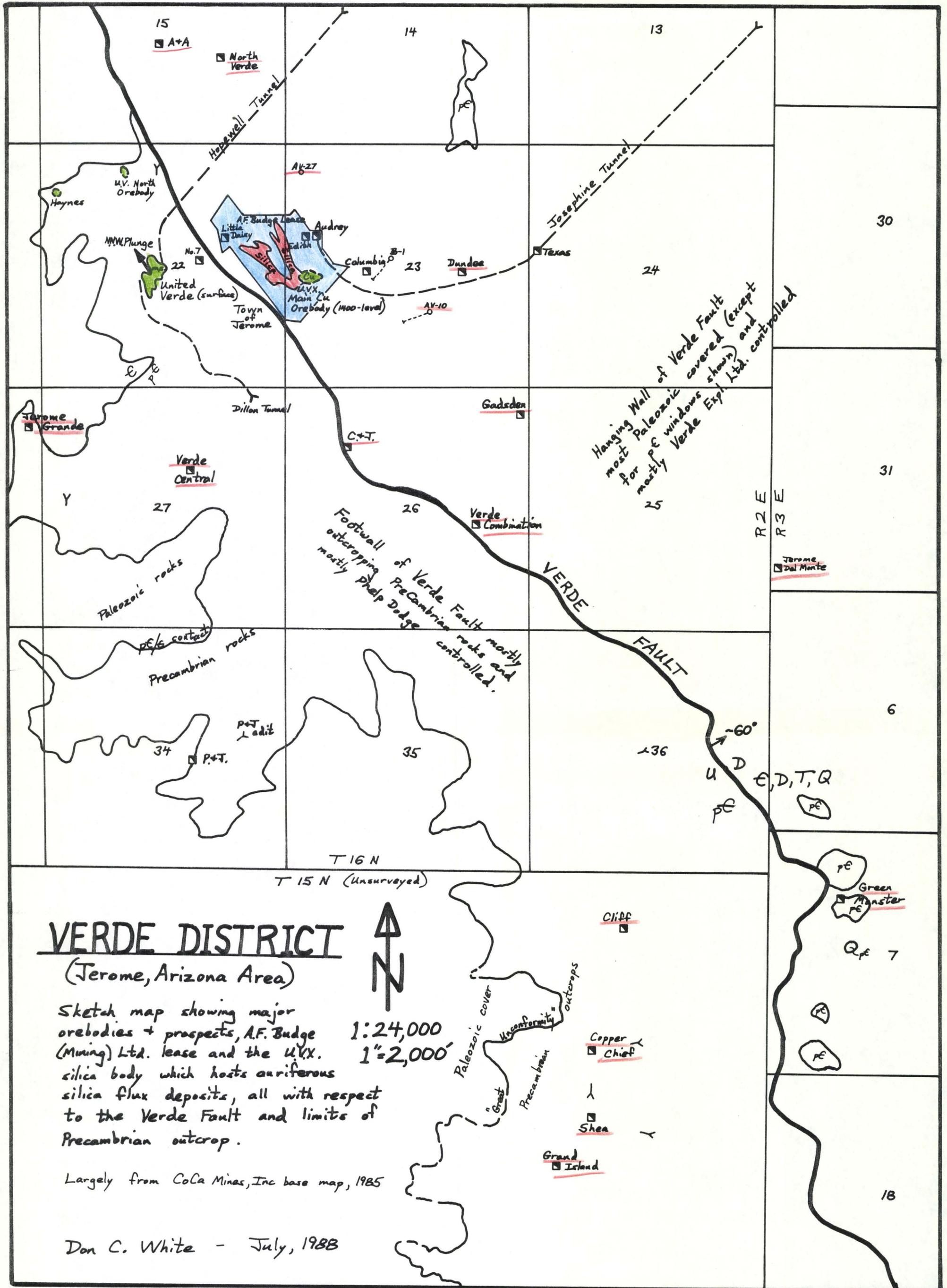
gold prevail. These are most manifest in the so-called "windows" to the Precambrian in the otherwise Paleozoic-dominated hanging wall to the Verde and Bessie faults. None of the assays of the samples collected there are attractive but they are quite few and far between. Most of the ground in these areas is Verde Exploration controlled (see sketch map) and could be prospected further for UVX-like, near surface potential.

2. The most immediately attractive outcrops visited are the siliceous knob of the Cliff Mine and the gently dipping siliceous and iron stained porphyritic rhyolite (?) of the so-called "flat fault" at the Copper Chief Mine. Both areas yielded low grade, open-pit, heap leach gold grades (.02-.06 oz/t) from grab samples of various lithologies (see attached sample descriptions with assay results). Unfortunately, both the Cliff and Copper Chief are Phelps Dodge owned (patented) properties. We know how far one gets with proposals for leases or joint ventures with them. However, if and when some deal could be struck, those two properties deserve evaluation.

3. Our reconnaissance took us repeatedly across the Precambrian-Cambrian unconformity. That contact holds the potential for geochemical clues to UVX-like gold occurrences in proximity to its outcrop and also has potential for harboring mineralization of its own. The structural and chemical boundary between the Tapeats Sandstone and underlying Proterozoic volcanics is an excellent locus of supergene iron-silica-gold. We know that CoCa Mines, Inc. started a comprehensive geochemical prospecting program focused on this unconformity. That data may be available from CoCa (through Bob Rivera) but was surely provided to Verde too. Thus Paul Handverger should be able to provide it if we don't mind letting him know our district-wide interests. CoCa's target was a UVX-like base metal target and their data ought to be reexamined in light of our understanding of the precious metal potential.

4. The most obvious and most attractive target remains P.D.'s United Verde. The hanging wall zone of the pit is known to have been sampled recently (May) under Paul Lindberg's direction (consultant to P.D.). Reputedly, his review of the old data yielded some attractive gold assays. Also, Bob Ludden (W. Region Expl. Mgr., Tucson) had said that a sampling and data review under P.A.L.'s guidance would be prerequisite to any deal with Budge. So maybe there is progress.

Another possibility that may come up, or could be sought, is a joint venture with a third party to include the U.V. zinc zone. Likely tens of millions of tons of several percent zinc remain in the hanging wall, between the mined copper zone and the more distant hanging wall silica gold target. Various firms active in the U.S. (e.g. Lac, Rayrock) are eager for zinc and capable of approaching such a capital-intensive project (it would almost certainly include shaft rehabilitation and a major mill investment). The opportunity would then exist to include Budge as evaluator of the gold picture.



VERDE DISTRICT

(Jerome, Arizona Area)

Sketch map showing major orebodies + prospects, A.F. Budge (Mining) Ltd. lease and the U.V.X. silica body which hosts auriferous silica flux deposits, all with respect to the Verde Fault and limits of Precambrian outcrop.

Largely from CoCa Mines, Inc base map, 1985

Don C. White - July, 1988

1:24,000
1"=2,000'



Hanging Wall of Verde Fault covered (except for most Paleozoic windows shown) and mostly Verde Expl. Ltd. controlled

Footwall of Verde Fault mostly outcropping Precambrian rocks and mostly Phelps Dodge controlled.

R 2 E
R 3 E

Jerome
Del Monte

U D E, D, T, Q
PE

Grand Island

Copper Chief

Shea

Cliff

Green Monster
Qf 7

18

31

30

15
A+A

14

13

North Verde

Hopewell Tunnel

Josephine Tunnel

U.V. North Orebody

AK-27

No. 7

A.F. Budge Lease

Dundee

MMW Plunge

United Verde (surface)

Little Daisy

Edish

Columbia

B-1

23

AV-10

U.V.X. Main Cu Orebody (400-level)

Town of Jerome

Texas

Dillon Tunnel

Gadsden

Jerome Grande

Verde Central

Verde Combination

Paleozoic rocks

PE/G contact
Precambrian rocks

P+T adit

P+T

T 16 N

T 15 N (Unsurveyed)

36

VERDE FAULT

~60°

6

VERDE DISTRICT

(Jerome, Arizona Area)

Sketch map showing major orebodies + prospects, A.F. Budge (Mining) Ltd. lease and the U.V.X. silica body which hosts auriferous silica flux deposits, all with respect to the Verde Fault and limits of Precambrian outcrop.

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U D E, D, T, Q
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Verde Combination

Paleozoic rocks

PE/G contact
Precambrian rocks

P+T adit

P+T

T 16 N

T 15 N (Unsurveyed)

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VERDE FAULT

~60°

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VERDE DISTRICT

(Jerome, Arizona Area)

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Largely from CoCa Mines, Inc base map, 1985

Don C. White - July, 1988

1:24,000
1"=2,000'



Hanging Wall of Verde Fault covered (except for most Paleozoic windows shown) and mostly Verde Expl. Ltd. controlled

Footwall of Verde Fault mostly outcropping Precambrian rocks and mostly Phelps Dodge controlled.

R 2 E
R 3 E

Jerome
Del Monte

U D E, D, T, Q
PE

Grand Island

Copper Chief

Shea

Cliff

Green Monster
Qf 7

18

31

30

15
A+A

14

13

North Verde

Hopewell Tunnel

Josephine Tunnel

U.V. North Orebody

AK-27

No. 7

A.F. Budge Lease

Dundee

MMW Plunge

United Verde (surface)

Little Daisy

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23

AV-10

U.V.X. Main Cu Orebody (400-level)

Town of Jerome

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Dillon Tunnel

Gadsden

Jerome Grande

Verde Central

Verde Combination

Paleozoic rocks

PE/G contact
Precambrian rocks

P+T adit

P+T

T 16 N

T 15 N (Unsurveyed)

36

VERDE FAULT

~60°

6

VERDE DISTRICT

(Jerome, Arizona Area)

Sketch map showing major orebodies + prospects, A.F. Budge (Mining) Ltd. lease and the U.V.X. silica body which hosts auriferous silica flux deposits, all with respect to the Verde Fault and limits of Precambrian outcrop.

Largely from CoCa Mines, Inc base map, 1985

Don C. White - July, 1988

1:24,000
1"=2,000'



Hanging Wall of Verde Fault covered (except for most Paleozoic windows shown) and mostly Verde Expl. Ltd. controlled

Footwall of Verde Fault mostly outcropping Precambrian rocks and mostly Phelps Dodge controlled.

R 2 E
R 3 E

Jerome
Del Monte

U D E, D, T, Q
PE

Grand Island

Copper Chief

Shea

Cliff

Green Monster
Qf 7

18

31

30

15
A+A

14

13

North Verde

Hopewell Tunnel

Josephine Tunnel

U.V. North Orebody

AK-27

No. 7

A.F. Budge Lease

Dundee

MMW Plunge

United Verde (surface)

Little Daisy

Edish

Columbia

B-1

23

AV-10

U.V.X. Main Cu Orebody (400-level)

Town of Jerome

Texas

Dillon Tunnel

Gadsden

Jerome Grande

Verde Central

Verde Combination

Paleozoic rocks

PE/G contact
Precambrian rocks

P+T adit

P+T

T 16 N

T 15 N (Unsurveyed)

36

VERDE FAULT

~60°

6

VERDE DISTRICT

(Jerome, Arizona Area)

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VERDE FAULT

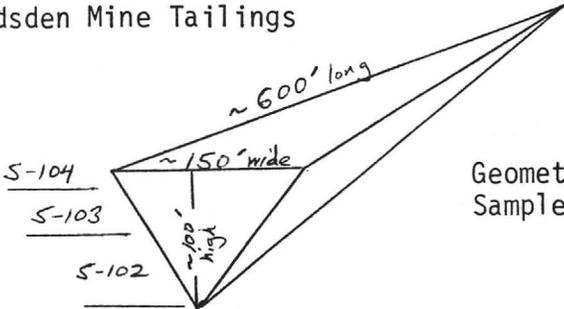
~60°

6

VERDE DISTRICT RECONNAISSANCE

Samples Assayed for Gold and Silver

(All samples are rock chips except S-118, a stream sediment)

<u>Sample</u>	<u>Location/Description</u>	<u>Fire Assay/AA</u> (oz/t)	
		<u>Au</u>	<u>Ag</u>
S-101	Calumet & Jerome (C&J) dump; selections of most siliceous rock	<.001	.12
S-102, 103, 104	Gadsden Mine Tailings	All <.001	.15
			
S-105	Verde Combination (VC) dump; selections of most siliceous rock	<.001	<.10
S-106,107	Green Monster vicinity; red and black jasper with black specular hematite, orange siderite, occurring in footwall of Verde fault, just upslope from W. adit	Both <.001	.14
S-108	Cliff Mine; siliceous volcanoclastic with azurite and malachite, from open cut on NW slope of siliceous knob	.066	1.69
S-109	Cliff Mine; light brown and beige and red-tan, vuggy, goethitic (?), slightly gossanous, same site as S-108	<.001	<.10
S-110	Cliff Mine; light gray quartz porphyry volcanoclastic with some azurite, malachite, chalcocite, bleaching, and clay alteration. Fine grained py and cpy in least oxidized specimens. Occurs in open cut at very top of knob.	<.001	.75
S-111	Cliff Mine; dark chocolate brown, "vuggy, limonitic" gossan with concentric, banded siliceous infilling. Occurs as car-size blocks in ravine NW of mine.	.034	.57

VERDE DISTRICT RECONNAISSANCE

Page Two

<u>Sample</u>	<u>Location/Description</u>	<u>Fire Assay/AA</u>	
		<u>Au</u>	<u>Ag</u>
S-112	Copper Chief; 2 meter chip sample from pale tan kaolinitic gouge through iron-stained orange-brown vuggy, porphyritic rhyolite to gossanous rock. Relict white and gray quartz clasts. Occurs as basal portion of so-called "Flat fault," above mid-level adit.	.026	12.53
S-113	Columbia Shaft; 2 to 4 foot wide shear zone in Devonian Martin Limestone, with CuCO_3 , FeOx (brown, orange, yellow-brown, red brown). Shear is just 10 ft. NW of shaft collar but is one of a set of at least four, all striking $\text{N}40^\circ\text{E}$ and near vertical.	<.001	<.10
S-114	Columbia Shaft; dark brown and yellow-brown, hard, indurated, very iron rich and siliceous (UVX "brown, vuggy") with fragments of Devonian Martin Limestone wall-rock incorporated. Fills a fracture to about 1 ft thick. Trends $\text{N}40^\circ\text{E}$, vertical. Occurs 10 ft W of powder magazine (?) door on scarp about 300 ft W of Columbia collar.	.030	.23
S-115	U.V.X. Mine dump; fresh, saccharoidal, slightly banded pyrite, little silica	.030	.23
S-116	UVX Mine dump; siliceous banded pyrite, about 60% white silica interbedded with fresh, sugary pyrite.	.018	.38
S-117	Precambrian "window" in Bitter Creek; some silicification and hematization of pE rock in railroad cut of Hopewell haulage just N of old UVX aerial tram loadout.	<.001	<.10
S-118	Bitter Creek stream sediment; from just below slaughterhouse	<.001	<.10

M E M O

TO: Dale Allen
cc: C.A. O'Brien, R.R. Short, A.F. Budge

FROM: Don White

DATE: October 22, 1988

SUBJECT: Iron King Mine Tailings

Forwarded with Ron Short were two samples, each about 10 pounds, of the tailings at the Iron King Mine. Each is a five-foot vertical channel of a different bench on the very large pile which displays an overall height in excess of 100 feet. So they can not be considered representative of the whole but are unoxidized, subsurface samples as you requested.

Accompanying is my Dec. 18, 1986 memo, some notes on the the tailings chemistry, other's work, and ownership, and some news articles on the Ironite operation utilizing the tailings now.

Five million tons of 0.055 oz/t Au looks enticing, but it's a tough nut to crack. Let me know if anything else will be of help.

DW:sk

M E M O

TO: Ben F. Dickerson, III, Carole A. O'Brien
FROM: Don White
DATE: December 18, 1986
SUBJECT: Possible applicability of a new gold leaching process to the Iron King tailings.

At the AIME meeting in Tucson, Dec. 8, Mike Attaway, mine superintendent at Homestake's McLaughlin project, described their embellishments of the conventional cyanide leach process to accommodate their sulfide-encapsulated gold. It is a problem identical to that of the Iron King tailings as far as I can tell. The Homestake folks have made it work at McLaughlin and I wonder whether we could at Iron King.

What is at stake is a surface pile of 5 million tons grading:

.055	oz/t	Au
.7	oz/t	Ag
.05	%	Cu
.25-.5	%	Rb
1.0	%	Zn
.5-.75	%	As

It has been looked at by Rosario, Eagle Pitcher, and Metallgesellschaft in the last decade or so but none have been able to economically liberate the gold from its pyrite host. Homestake metallurgists have done that now by a hot, pressurized, acidified, oxygenated cyanide leach process. Their feed contains 3-4% sulfides averaging .15 oz/t Au. They add sulfuric acid to reduce the pH to 1, pressurize the system to 350 p.s.i, add pure oxygen, and steam heat.

Of course this system is very corrosive, requiring specially fabricated titanium process equipment. But the oxidized product it yields is amenable to conventional cyanide recovery. The process is proven and the methods and equipment have been tested. I think it may be worth some inquiries regarding the process availability.

The other consideration is the tailings availability. If interested, I could pursue some inquiries on that. My understanding is that they are available for lease or sublease right now.

Let me know whether this idea has enough merit to pursue for Budge or anyone else.

DW:sk

Iron King Tailings

From discussion with Bob Croot, I.K. Assay office, 11-8-85
during visit by/with Doug Dunnet of Ranger Exploration (Australia).

Resource: 5 million tons @

.055 % Au	.05 % Cu
.7 % Ag	.25-.5 % Pb
	1.0 % Zn
	.5-.75 % As

Previously studied by: Rosario, Eagle Pitcher, Metallgesellschaft.

Metallgesellschaft recently dropped its lease and it is now controlled by Mettex, owned by Hilde Brungs of Phoenix - Ironite operation, etc. Brungs' control is under lease (?) from owner, Art Still, of Tucson (geol. consultant).

Metallgesellschaft could get only 45% Au recovery using cyanidation; experimented fruitlessly with pressure leaching, concentrating, carbon-in-pulp, etc.

"Ironite" is used to treat "chlorosis", the lack of Fe in overly basic soils. The $FeSO_4$ acts to acidify the soil with a long slow, release time. It also supplies mineral supplements such as Cu, Zn,

12-16-86

Idea of applying McLaughlin Mine's pressurized, acidified, oxygenated cyanide leach system to I.K. tails.

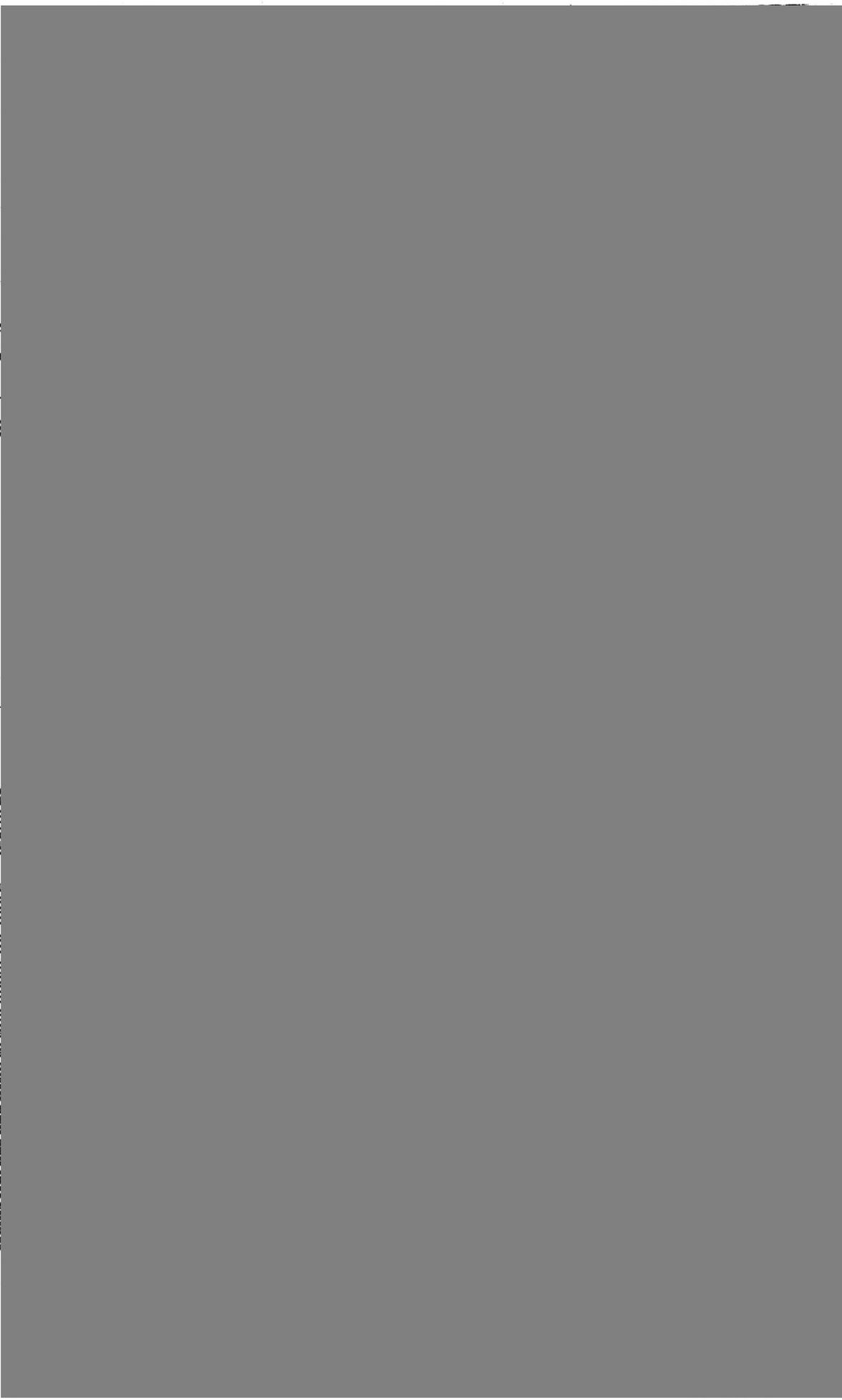
20 mt. @ .15 originally (18 mil. tonnes @ .145 now)

Ore @ 3-4 % sulfides + H_2SO_4 + P + steam + O_2 \Rightarrow
pH=1 P=30 psi.

oxidized product amenable to conventional cyanide recovery (from auriferous pyritic ores.)

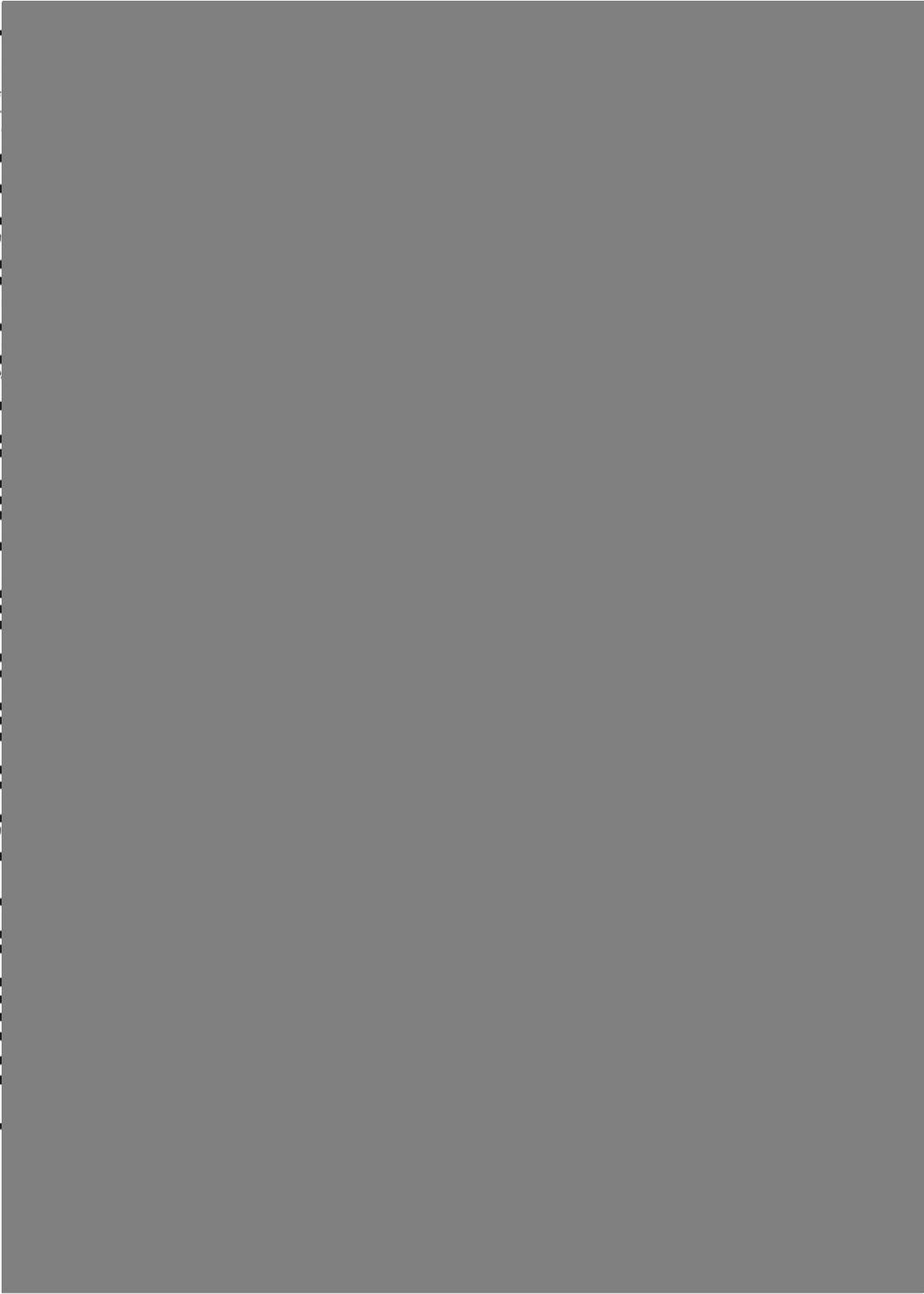
Iron King Mine spurring economy

Courier - Oct 2, 1988
Humboldt has had little to talk about for more than a few times



ances its services-trades-government income bases.

Mina nonlonichina contb



pellets) and bagging the product. was the vice president of ... See VIII, page 0

John Tacey -

1-322-5000

Confidentiality - Dr White,

Three areas -

UVX mine - Information all confidential
except that information published
Phelps Dodge - UV Mine

District - Mostly public information except
assay results from our work on old dumps.

Questionable area would be how information
about district has been influenced by his work
at UVX mine. Information would be related to
gold occurrences in close proximity to sulphide
deposit.

This particular information has been discussed
and published in talks and publications presented
at 3 minewy conferences.



A.F. Budge (Mining) Limited

4301 North 75th Street
Suite 101
Scottsdale, AZ 85251-3504

March 10, 1989

(602) 945-4630
FAX (602) 949-1737

Donald C. White
521 E. Willis Street
Prescott, AZ 86301

Re: Confidential and Proprietary Information
Verde Mining District

Dear Don:

I have reviewed your letter of March 7, 1989, with Tony Budge and Ron Short and discussed the matter with our lawyer and the following is our response.

First of all, it is important to note what we believe industry practice to be concerning the fiduciary obligations of mineral consultants in the treatment of information acquired on behalf of clients and what may or may not be confidential or proprietary information. Our view is that all information acquired concerning a specific target or operation is confidential or proprietary, and that this classification remains until the position is either abandoned by the client or the consultant is otherwise released from his fiduciary obligation. In the case of the Verde Mining District, A.F. Budge (Mining) Limited continues to pursue an ongoing development program and may, depending on budgetary limitations, renew its interest in other parts of the district.

Essentially, we feel that the great majority of your current information on the Verde Mining District has been gained as a direct result of work that you performed as a consultant for A.F. Budge (Mining) Limited and for which you were paid by Budge. We therefore feel that the information you acquired is proprietary to Budge. *INFORMATION WHICH HAS NOT BEEN PUBLISHED*

New information

At the same time, however, we certainly recognize that some of the information provided by you has been obtained from sources available to the general public. The problem is that even the public information, as provided by you, has been substantially "colored" by further information that you have been privy to that was obtained as a result of the exploration and development program undertaken by Budge and which information is for the most part both confidential and proprietary.

D. C. White
March 10, 1989
Page 2

Under these circumstances, therefore, it is our feeling that Tony's proposal (i.e., that Budge would not object to your performing work for third parties within the district so long as Budge is provided with copies of any reports) is appropriate and certainly a fair compromise for releasing you from what we would otherwise suggest would be a conflict of interest and potential breach of fiduciary obligation.

*We know!
Australian
Co, Western
Mining
TOURED UVX
MINE ON FRIDAY
3/3/89 WITH MRS
(RS) APPROVAL*

Your letter suggests that you objected to Tony's proposal based on your concern that you would be breaching a new fiduciary obligation to a third party by any disclosure of your client's identity and an objection that the new client is paying for the preparation of the report. We don't believe that either aspect should be of concern. First of all, we would have no objection to your withholding of the name of your client from the transmittal of any report to Budge. As we see your present proposal, your work will not entail the preparation of any new information but only regenerating previously acquired materials.

Essentially, it is our belief that the suggested procedure is in the best interest of both parties. It was, after all, your reports and recommendations that were the bases of elections by Budge not to proceed with the exploration of certain targets that you continue to believe are attractive. If some new twist is placed on new opinions and recommendations concerning potential targets that you have previously recommended to Budge, I am sure we would be extremely unhappy if a third party acting on these new interpretations, initiated a successful program in the area Budge had initially turned down. Thus, you would be protected from such an assertion.

With regard to the future development of our current operations at the United Verde Extension, we feel that the distinction between public domain information and information you acquired as a direct result of your consulting services for Budge would be extremely difficult to delineate and therefore we would have a blanket objection to your doing work for third parties on this property. We therefore suggest that the most appropriate way of handling this would be to bring to Budge any individuals who are so interested and we would make the determination at that time as to whether or not we were interested in pursuing your client and whether or not any proprietary or confidential information could be released. If an election was made to release the information, you would of course be free to render whatever independent opinions you felt appropriate in connection with the review.

D.C. White
March 10, 1989
Page 3

If the foregoing represents an acceptable arrangement concerning the use of information, I would appreciate your signing a second copy of this letter and returning it to me.

Yours very truly,

Carole A. O'Brien

The foregoing is acceptable.

Donald C. White

Dated this _____ day of March, 1989.

FAX COVER SHEETDATE: 3-8-89

TIME: _____

TO:

Name:

Carole O'Brien

Address:

R. F. Budge (Mining) Limited4301 N. 75th StreetScottsdale, AZ 85251-3504

Fax No:

1-949-1737

FROM:

Name:

John C. Lacy

Address:

DeConcini McDonald Brammer

Yetwin & Lacy, P.C.

2525 East Broadway

Suite 200

Tucson, Arizona 85716-5303

Telephone Number: (602) 322-5000

Fax Number: (602) 322-5585

Number of Pages Including Cover Page: 8

:JE1

JCL
12-01-87

CONSULTING AGREEMENT
(_____ Project)

BY THIS CONSULTING AGREEMENT,

effective as of the _____ day of _____, 198__,

by and between _____,
whose address is _____
("Consultant"),

and

_____,
whose address is _____
("Company"),

Company has agreed to retain Consultant and Consultant has agreed to perform certain services for Company under the following terms and conditions:

1. Retainer; Term

Company does hereby retain the services of Consultant for a term of _____ (_____) _____ unless extended by mutual consent of the parties or terminated under the provisions of Section 7 hereof.

2. Relationship of Parties

Consultant is engaged in an independent contracting business of providing consulting services in [describe services]

Claimstaking: staking mining claims on public domain of the United States.

Landman: mineral land titles and property acquisition.

Technical services: plant design, drafting, engineering and other technical services.

Geologist: geology other engineering disciplines related to mineral land evaluation.

Hydrologist: groundwater hydrology for the identification, acquisition and development of water rights and the development of water resources for mine development.

Consultant, its employees, servants and agents, shall perform services required by this Agreement as an independent contractor and shall not be considered as an employee or agent of Company.

3. Payment of Consultant

The consulting services required by this Agreement shall be compensated at the rate of _____ Dollars (\$_____) per day. The consulting fee shall be prorated if only a partial day (8 hours) is worked. Consultant shall provide vehicles for its employees and shall be reimbursed by Company at the rate of _____ cents (\$.____) per mile for all travel. If Consultant rents such vehicles, reimbursement shall be at the cost to Consultant. Company shall reimburse Consultant for the cost of meals and required lodging. Any expenses required for the performance of Consultant's activities hereunder (e.g., drafting, typing, maps, publication, reproductions, field and office supplies) shall be reimbursed at actual cost; provided, however, that Consultant shall advise Company in advance of the nature and approximate cost of such materials required hereunder. Consultant shall invoice Company once per month for services performed hereunder and shall present receipts for all reimbursable costs. Minor charges may be presented on the statement of Consultant.

[If compensation is based on a special schedule, attach the schedule to this agreement and use the following as an exhibit]

3. Payment of Consultant

The consulting services required by this Agreement shall be compensated at the rates fixed in Schedule ___ to this Agreement.

4. Activities of Consultant

a. Scope of Project - Consultant shall use its best efforts to perform the work required by the terms and conditions detailed in Schedule ___ attached hereto and incorporated herein by this reference.

[Special provisions for landman]

a. Scope of Project - Consultant shall use its best efforts to arrange for land acquisition by Company in the area specifically outlined in Exhibit A. Consultant shall not represent that it has the authority to enter into any contracts, and that any agreements negotiated with any landowner as a result of Consultant's efforts shall be offers subject to approval by Company.

b. Reports - Consultant shall maintain a log of telephone and personal contacts with any landowners by individual and date. Consultant shall also advise Company on a monthly basis through a monthly summary of activities of such contracts. Consultant shall also report impressions of progress in negotiations, competitor activity, adverse political climate or any other

matters that may affect Company's ability to prospect and mine within the general area described in Exhibit A.

[Special provisions for technical services]

a. Scope of Project - Consultant shall use its best efforts to complete preliminary engineering drawings and cost data [describe facility and or processes]. Information necessary for the Consultant to perform work required by Company shall be provided to the Consultant in a timely manner by Company and shall be the responsibility of Company.

b. Reports - Consultant shall furnish Company with drawings and cost estimates prepared or undertaken by Consultant under the terms of this Agreement. If no information is in final form, Consultant shall furnish Company with a summary report of activities undertaken during the previous month.

[If exclusive services are being performed, use the following]

a. Exclusive Retainer - Consultant agrees that he will conduct all of his professional consulting activities for Company only. Company in turn agrees to provide Consultant with work under this Agreement equivalent to sixty percent of Consultant's "Available Time." Available Time shall mean the dates designated by Consultant's schedule of his availability for work as furnished to Company not later than the 15th day of each month for the following month. Consultant agrees to not be unavailable for consulting activities for periods in excess of one week, except for one four-week period during the one-year term of this Agreement or by prior arrangement.

[If the Consultant is being required or permitted to acquired property rights on behalf of the company, use the following.]

b. Acquisition of Properties - Consultant may, in [his own name] the name of Company, stake mining claims on public domain of the United States or acquire mineral exploration and mining rights by permits or leases from the State of *. [If acquisition made in the name of Consultant in State land in Arizona or other states that prohibit acquisition by agents acting on behalf of undisclosed principals, add the following sentence.] If such acquisition is made, Consultant shall be the legal owner of such mineral properties and shall not hold title to such mineral properties as a trustee, agent, attorney-in-fact or in any other representative capacity for Company; provided, however, that Company is hereby granted an option to acquire such mineral property rights by payment to Consultant of all expenses related to the acquisition of such mineral rights and all costs and expenses related to the evaluation thereof performed by Consultant. Such option shall exist during the term of this Agreement, and if not exercised, Consultant shall be free to deal

with such mineral properties in its own behalf. All of such properties shall be added as appropriate as a Schedule ___ to this Agreement.

[Special provisions for claim staking]

a. Scope of Project - Contractor shall perform services of located unpatented mining claims within an area specifically set forth in Schedule ___ hereto.

[General provisions to be included in all contracts]

c. Representations - Consultant represents and warrants that Consultant is (1) familiar with the scope of work required by the terms of this Agreement, (2) familiar with the Project Area, the terrain and working conditions, the type of equipment and facilities necessary to complete performance of the Project, and (3) that all licenses and permits required for the performance of the work required hereunder have been or will be acquired by Consultant prior to undertaking performance required hereunder.

d. Insurance - Consultant shall maintain automobile and public liability insurance in an amount acceptable to Company and shall furnish Company with reasonable evidence of the existence of such insurance.

5. Confidentiality

[Short form]

Consultant shall maintain strict security over all knowledge and information acquired or developed during the performance of this Agreement. Consultant shall not divulge such knowledge or information directly or indirectly to any person without the prior consent of the Company.

[Long form where patentable ideas may be generated]

a. Secrecy - Consultant shall maintain strict security over all knowledge and information acquired or developed during the performance of this Agreement. Consultant shall not divulge such knowledge or information directly or indirectly to any person without the prior written consent of the Company. This secrecy obligation shall not apply to any information that (1) is now generally known or readily available in the industry or otherwise publicly available, or that becomes so known or readily available without the fault of either Consultant or the Company but only to the extent that such information is available; (2) is possessed by Consultant without restriction as to disclosure or use prior to any disclosure by the Company; or (3) is disclosed

in any issued patent, publication, or other source from and after the time it becomes generally available to the public.

b. Patents - Consultant agrees that the Company shall be the sole owner and retain the right to use any technical data, know-how, reports, studies, records and information generated or developed for Company by Consultant under and during the term of this Agreement. Company shall own and have the sole interest in any invention or discovery and all letters patent issuing thereon made or conceived by Consultant, any employees or permitted subcontractors during the term of this Agreement. Consultant agrees to cooperate in the filing and prosecution of any patent application arising from work performed under this Agreement.

c. Application - Any employees or permitted subcontractors of Consultant performing work under the terms of this Agreement shall execute statements indicating that they have been advised of the obligations of this Section 5 and have agreed to be bound by the terms thereof. The absence of any such agreement with an employee of Consultant or permitted subcontractor shall not relieve Consultant from its obligations under this Section 5.

[Long form where Consultant is in a position to acquire knowledge that could put Consultant in competition with Company]

a. Secrecy - Consultant shall maintain strict security over all knowledge and information acquired or developed during the performance of this Agreement including without limitation "Confidential and Proprietary Information." Consultant shall not divulge such knowledge or information directly or indirectly to any person without the prior written consent of Company. Consultant shall not disclose Confidential Information to anyone other than appropriate individuals within Company's corporate organization (unless such disclosure is reasonably believed to be in the best interest of Company), nor take advantage of any business opportunities. Consultant shall further promptly bring to the attention of Company any disclosure of Confidential or Proprietary Information. Consultant further agrees to transfer to Company any property or other advantage that Consultant may obtain as a result of any unauthorized use of Confidential or Proprietary Information. Such transfer shall be made at Company's election, following full disclosure of all of the terms of such acquisition and at employee's acquisition cost. This secrecy obligation shall not apply to any information that (1) is now generally known or readily available in the industry or otherwise publicly available, or that becomes so known or readily available without the fault of either Consultant or Company but only to the extent that such information is available; (2) is possessed by Consultant without restriction as to disclosure or use prior to any disclosure by Company; or (3) is disclosed in any issued patent, publication, or other source from and after the time it becomes generally available to the public.

b. Definitions -

(1) "Confidential Information" includes, without limitation, any technical information, geological concepts, data, designs, drawings, specifications, discoveries, methods, patentable or unpatentable ideas, or know-how relating to Company's business activities.

(2) "Proprietary Information" includes information related to business opportunities that are or may be of interest to Company.

(3) "Company," as used in this Agreement includes subsidiaries of Company's corporate parent and partnerships and joint ventures in which the Company has more than a ten percent interest.

c. Survival - The obligations set forth in this Section 5 shall continue to exist after the termination of this Agreement. Consultant shall not use any information related to property acquisitions of interest to Company to acquire rights for himself or on behalf of third parties in competition with Company for a period of two years after the termination of this Agreement. If Consultant desires to obtain rights in any area about which information related to Company's business opportunities was received during the course of this Agreement during the two-year period of exclusion, such area may be identified to Company (attention Manager-Lands) and Company shall provide Consultant with a prompt indication of any continuing interest in such area. If no continuing interest is expressed, Consultant shall be free to acquire rights in such area.

6. Notice

Any notice required shall be given in writing and personally delivered or deposited in the United States Mail and addressed to the parties as indicated in the recital of the parties hereto. Delivery shall be complete upon mailing as evidenced by the postmark on the envelope. Each of the parties may change its mailing address by notice given as set forth above.

7. Termination

This Agreement may be terminated at any time by either party upon ten (10) days' written notice to the other party. In such event, Company shall have no further obligation to Consultant except to make any payments which have theretofore become due under Section 3 hereof, and Consultant shall have no further obligation to furnish such reports as may be required hereunder except for reports related to activities undertaken prior to the effective date of termination.

8. Assignment or Subcontracting

Consultant shall not assign or subcontract, in whole or in part, any of the services to be furnished under this Agreement without the prior written consent of Company.

SIGNED this _____ day of _____, 198__, effective on the date set forth above.

CONSULTANT:

COMPANY:

Soc. Sec. # _____

By _____

SERVICE.AGR. CONSULTANT

Ron

Don White
521 E. Willis St.
Prescott, AZ 86301
778-3140

March 7, 1989

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short ✓
A.F. BUDGE (MINING) LTD.
4301 N. 75th St.
Suite 101
Scottsdale, AZ 85251

Dear Tony, Carole, and Ron:

I am an independent consultant with a number of clients. One of them recently requested a writeup of exploration opportunities in the Verde District. Obliging them but not willing to reveal any proprietary information of Budge's without permission, I phoned Carole to see whether U.V.X. reserves could be included. This was with the knowledge that Budge's mining plan is one of high-grading less than 10% of the drill-indicated reserves, completing that effort by July 1989, and then farming it out.

Carole's response related from Tony was, "OK, so long as we get a copy." Now how can I give Budge a copy of my exploration advice district-wide when someone else is paying for that advice? And why not share reserves with a potential buyer now, when that's your very intention within a short while? I see it as a total non-sequitur.

With regard to my work for others in the Jerome area, consider:

- 1) I have pushed the U.V. as a target for Budge, in writing, no less than half a dozen times and no efforts are now being made to explore there.
- 2) I have recommended other P.D.-owned targets with open-pitabile gold potential based on reconnaissance with Bob Hodder. That reconnaissance was cut short by Ron and no action was taken on the findings.
- 3) I have alerted Budge to silica bodies just beyond the 80-acre U.V.X. lease but also cautioned you on their depth, sulfidic nature, and difficulty of exploration. They were deemed outside Budge's interests.
- 4) I was told by Ron in January not to work on the U.V.X. in any way unless specifically requested by him.
- 5) I have presented papers on the U.V.X (written and presented on my own time and at my expense) to Arizona and national geological professional societies on three occasions (Tucson, 1986; Flagstaff, 1987; Spokane, 1988) with Budge approval. There are no great secrets of the U.V.X. gold/silica geology, only

Anthony F. Budge
Carole A. O'Brien
Ronald R. Short
March 7, 1989
Page Two

the reserves.

So if I am recognized by the geologic community as conversant with gold deposits, with the U.V.X., and with the Verde District in general, and I'm not being utilized by Budge on those issues, then surely I am a free agent to assist others. That is my livelihood. My knowledge is my asset for sale. I see nothing at issue there. Of course I will not reveal anything proprietary such as reserves without your consent. In the same way I can not reveal other's secrets which in this case include the client's identity.

My advice to you, however, is that nothing be deemed secret. How is anyone interested in the property to make decisions without facts and figures? And they want them independently, not from Budge, but from a third party. They know I do not operate on any finder's fee or bonus system but only straight fee-paid consulting. That's what they want.

I hope these issues won't be any problem in the future. I see no reason they should be. Laying them out here is mainly for the record.

Regards,



Don White
Geologist, C.P.G.

DW:sk

Ron

Don C. White
521 E. Willis St.
Prescott, AZ 86301
602-778-3140

March 28, 1989

Carole A. O'Brien
Ron R. Short
Anthony F. Budge
A.F. BUDGE (MINING) LTD.
4301 N. 75th Street, Suite 101
Scottsdale, AZ 85251

Dear Carole, Ron and Tony:

I was able to meet March 14th with Carole and Ron and clear up some misinterpretations with regard to confidentiality of information related to the Verde District. First, we agreed that there are really three separate issues:

- a) Verde district overall
- b) United Verde mine owned by P.D.
- c) U.V.X. mine leased by Budge

Then we discussed both the sources of information dealt with and the status of Budge's interest in each of those areas. For the Verde district and United Verde areas, the only sources have been published maps and reports and otherwise public information. Budge's efforts in the district were confined to a couple days reconnaissance which turned up geochemistry anomalies on P.D.-owned old mine sites which Budge has no interest in pursuing. Budge's interest in the United Verde never involved any field work or sampling, only a joint venture proposal to Phelps Dodge which has never been answered and has not been pursued in over two years. Budge has no plans to repropose any program there.

Thus the district-wide and United Verde issues (all exclusive of U.V.X.) are public information sources and totally inactive as far as Budge is concerned. For these reasons no restrictions can be put on my activities on behalf of other clients within those areas.

The U.V.X. is clearly a different matter. There my work has contributed to discoveries now being mined within the confines of a lease held by Budge. Budge activities at, and information related to U.V.X., are certainly proprietary and would of course be kept confidential. That includes but is not restricted to reserves, mining plans, and geologic information not already published in three papers approved by Budge (AZ Geol. Soc. Digest XVI, 1986; Geol. Soc. Amer. Abstracts, 1986; and Northwest Mining Convention paper, 1988).

So, to summarize, I see no conflict in my ongoing involvement on behalf of Budge at U.V.X. and my activities for others elsewhere in the Verde district. Fiduciary responsibilities of work at U.V.X. will continue to be respected.

Sincerely,



Don C. White
Geologist, C.P.G.

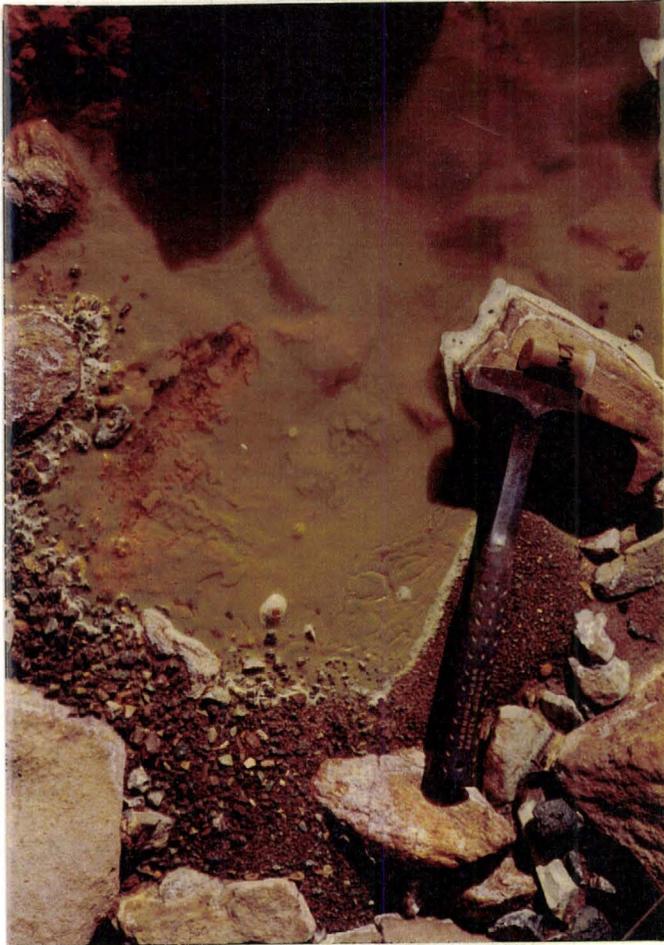


Figure 5:

Siliceous sludge ("Sludge 2" site) in Bitter Creek with iron and copper precipitate.



Figure 6:

Ferricrete along bank of Bitter Creek ("Ferricrete 2" site) with heterogeneous clast types from Precambrian jasper through Tertiary conglomerate and Hickey Basalt.

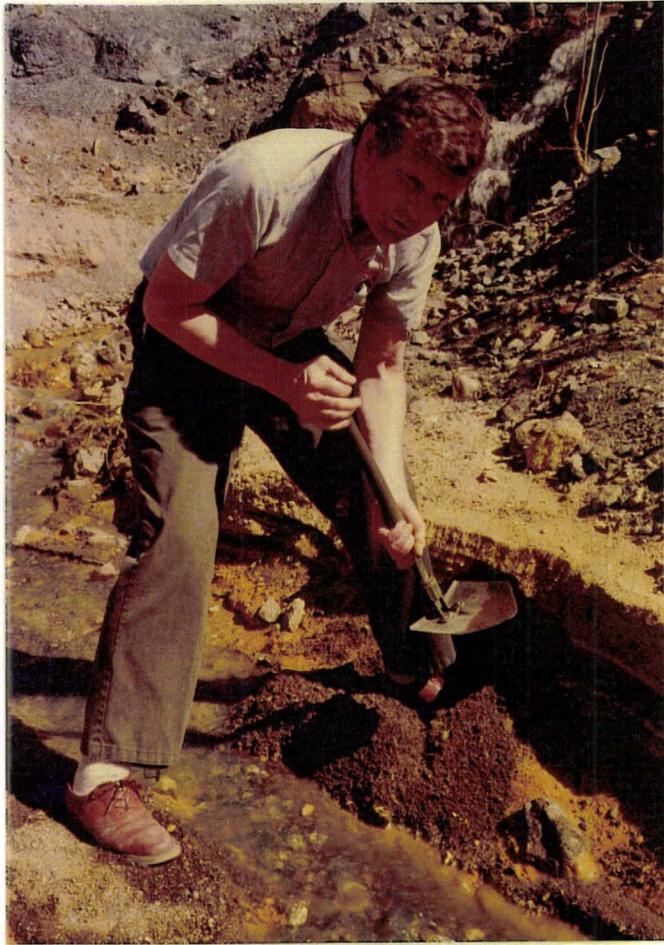


Figure 3:

Bob Hodder sampling
ferruginous sediment
at the "glory hole"
gob draw-point
("Sediment 1" site)

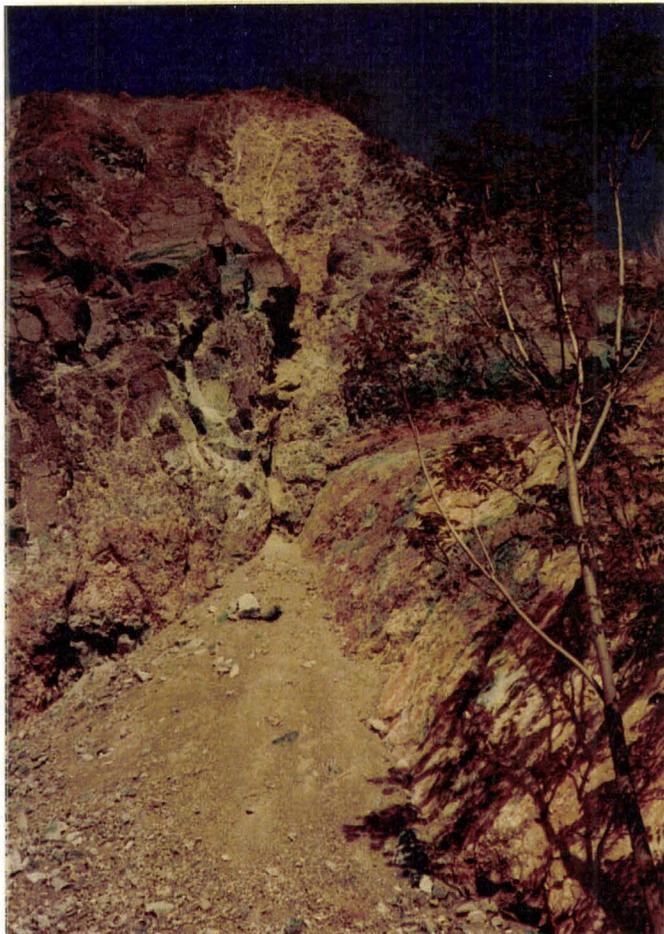


Figure 4:

Supergene copper carbonate
along a fault in Hickey
Basalt (about 12 m.y. age)
on the east side of the
"glory hole."