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SOUTHWEST EXPLORATION, INC.

November 25, 1987

Ms. Carole A. O'Brien
Coordinator
A. F. Budge (Mining) Limited
7340 E. Shoeman Lane, Suite 111 "B" E
Scottsdale, Arizona 85251

Dear Carole:

Following is our proposal for an analysis of reopening either the Audrey Shaft or the Josephine Tunnel. Based on conversations with Joe Fernandez, we will limit this study to the cost of refurbishing either the shaft or tunnel, with operational factors being taken into account at a later date. In order to accurately estimate the costs involved, physical inspections of both the shaft and tunnel will be conducted, to the extent that safety and cost factors permit.

The Audrey Shaft will be inspected from the 800 to the 1300 levels using our rope system; however, I do not believe it to be cost-effective to inspect above the 800 level at this time. As shown in Exhibit A, there is no entry into the Audrey from the collar down to the 800 level. This distance of 575 feet is too great to cover with climbing ropes, or a wench truck for that matter. A small hoist and headframe would have to be temporarily set-up for the inspection, the cost of which would be excessive. I believe it is practical to assume the Audrey is in good condition above the 800 level (where it has not been disturbed by entry and ground conditions are better) **IF** we find it in good condition through the lower levels.

The cost of performing this inspection is outlined below.

I. Manpower and Per Diems.	$1800.	
II. Purchases and Rentals.	408.	
III. Travel.	260.	
TOTAL		$2468.

Due to the relatively long time required to drain caves in the Josephine Tunnel, I plan to spend a day with one of your crews training them to do the drainage work safely, with someone reporting back to us on progress. Once water levels

-continued-

in the tunnel are acceptable, I would return with Dave Aker to conduct the inspection, which would include detailed measurements of caved areas and plans to catch the ground. Cost for this inspection would be:

I. Manpower and Per Diems.	$1950.	
II. Purchases and Rentals.	576.	
III. Travel.	521.	
TOTAL		$3047.

Once inspections are complete, a final report would be drafted, costing:

I. Engineering, Research.	$ 720.	
II. Datagathering.	840.	
III. Drafting of Report.	1470.	
TOTAL		$3030.

Costs for the entire program total $8545. If you have any questions, please don't hesitate to contact me.

Respectfully submitted,

Dan Maxwell

D. L. Maxwell

P. O. Box 3026
Silver City, N M 88062
(505) 536-9301

exhibit

xc: file.

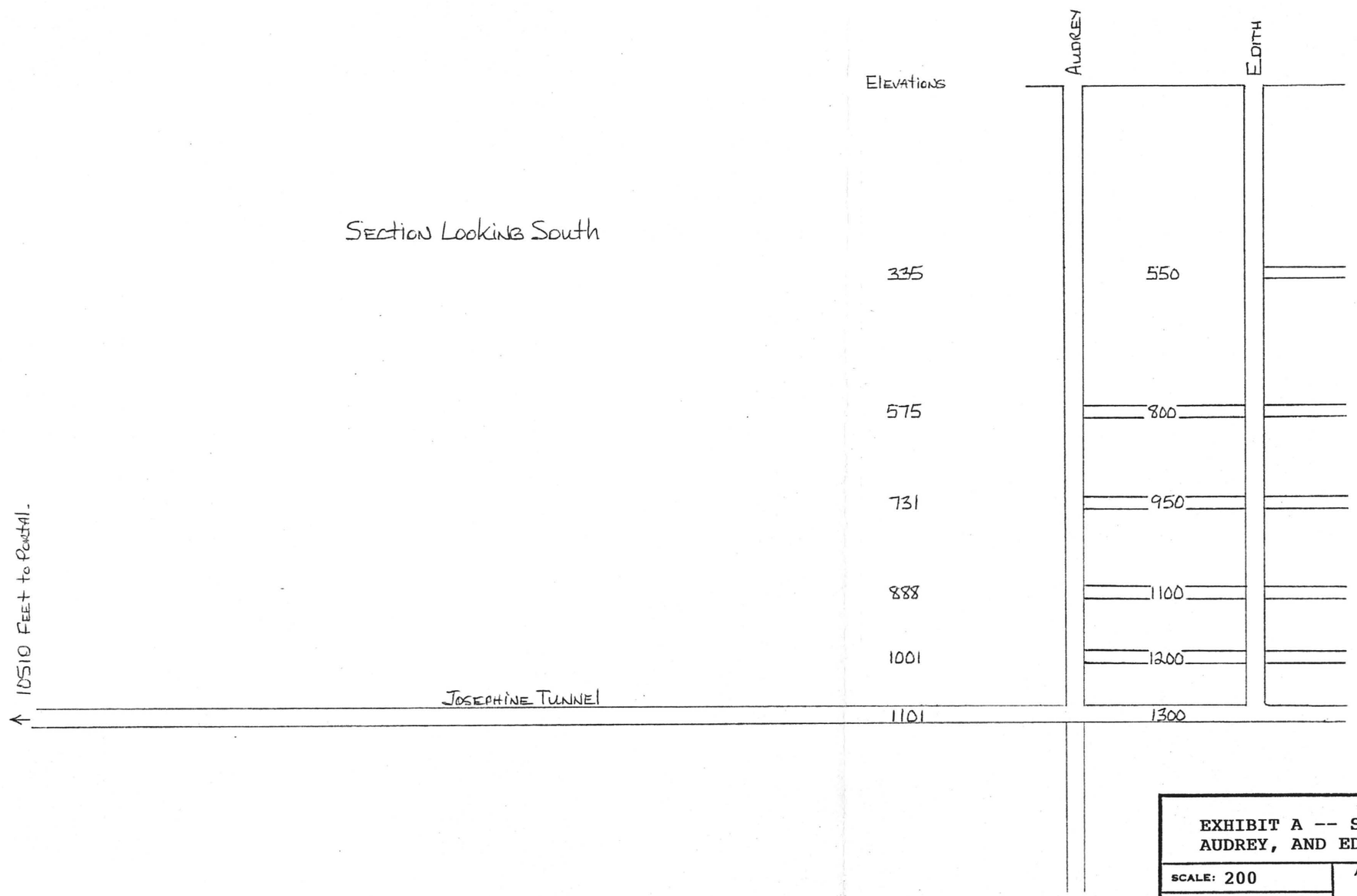


EXHIBIT A -- SECTION OF THE JOSEPHINE TUNNEL, AUDREY, AND EDITH SHAFTS, UVX MINE.

SCALE: 200	APPROVED BY:	DRAWN BY DLM
DATE: 11/25/87		REVISED
for BUDGE A.F. Budge (Mining) Limited		
		DRAWING NUMBER

		Average Drill hole Intercept	Average Grade Gold equivalent @ 70:1
Morgan Station		19	0.343
809	"	17	0.306
902	"	20	0.245
911	"	22	0.239
907	"	15	0.227
	Weighted average	18.6	0.272

Hole No.	Bit Size	Rock Type	No. of Feet	Cost per ft.	Drilling Cost	Total Hours	Drilling Hours	Hourly Advance	Actual Per Ft. Cost without supplies	Actual Per Hr. Cost without supplies	Proposed Charges	Total Cost of hole	Overall Cost per ft.
809-9	NQWL	Diorite	101	$36.15	$3,651.15								
	NQWL	Chert	86	$56.15	$4,828.90								
		Totals	187		$8,480.05	71	71	2.63	$45.35	$119.44	$87.35 per hour $5.00 per foot equivalent to: $100.52 per hour net ($1,343.20)	$9,667.14	$51.70
902-1	NQWL	Diorite	65	$36.15	$2,349.75								
	NQWL	Chert	123	$56.15	$6,906.45								
	BQWL	Chert	35	$55.85	$1,954.75								
		Void	7		$0.00								
		Totals	230		$11,210.95	157	148	1.55	$48.74	$75.75	equivalent to: $95.12 per hour net $2,866.85	$15,138.08	$65.82
902-2	HQWL	Diorite	52	$37.15	$1,931.80								
	HQWL	Chert	68	$57.15	$3,886.20								
	NQWL	Diorite	35	$36.15	$1,265.25								
	NQWL	Chert	38	$56.15	$2,133.70								
		Totals	193		$9,216.95	126	112	1.72	$47.76	$82.29	equivalent to: $95.97 per hour net $1,531.25	$14,352.64	$74.37
902-3	HQWL	Diorite	35	$37.15	$1,300.25								
	HQWL	Chert	77	$57.15	$4,400.55								
	NQWL	Diorite	8	$36.15	$289.20								
		Totals	120		$5,990.00	68	59	2.03	$49.92	$101.53	equivalent to: $97.52 per hour net ($236.35)	$8,434.40	$70.29
902-4	HQWL	Diorite	50	$37.15	$1,857.50								
	HQWL	Chert	27	$57.15	$1,543.05								
	NQWL	Chert	138	$56.15	$7,748.70								
		Totals	215		$11,149.25	106	102	2.11	$51.86	$109.31	equivalent to: $97.89 per hour net ($1,164.55)	$14,798.59	$68.83
Example													
911-1	HQWL	Chert	60	$57.15	$3,429.00								
	NQWL	Chert	60	$56.15	$3,369.00								
		Totals	120		$6,798.00	104 84	100 80	1.20 1.50	$56.65 $56.65	$67.98 $84.98	equivalent to: $93.35 per hour net $2,537.00 $670.00		

MEMORANDUM

TO: Carole A. O'Brien

FROM: R.W. Hodder and D.C. White

DATE: October 31, 1987

SUBJECT: Review of current memoranda, drill holes 809-8 and 809-9, plus 902-1 and 902-2.

Introduction

Since our last joint review memorandum of September 3, 1987, 2 of 3 recommended holes in the 809 zone have been drilled and 2 of 11 recommended holes have been drilled in the 902 zone. The drive on the 950 level to the 911 drill station has penetrated chert with gold in the south part of the 1205/Gold Stope zone and is 20 feet north of the planned location of the 911 drill station. In addition M. Janeck has commented on direct mining costs and because this comment contains some misconceptions of previous work we begin with it.

1) M. Janeck memorandum of October 2, 1987.

Page 1, 5th paragraph, line 3, Mr. Janeck states "Reserves are considered as drill indicated." This may be his consideration but it is not implied in our statements to date except for the M-3 zone where we felt the density of drilling and the construction of plans and vertical cross sections provided the control for such a calculation. We have been careful to call estimates of tonnage and grade in zones other than M-3, "estimates of potential" as in Table 2, our memo of September 3, 1987.

Also in the 5th paragraph, lines 6 through 9, Mr. Janeck notes an apparent discrepency between a total potential of 468,000 tons of 0.22 ounces of gold equivalent per ton in Table 2 and 532,000 tons of 0.21 ounces of gold equivalent per ton in Table 3. There is no discrepency. Table 2 is titled "Comparison of Successive Estimates of Potential in Verde Area" and the derivation of the 468,000 tons is explained as a potential for the Verde Area only. Table 3 is titled "Gold reserve totals for the UVX project, updated to September 3, 1987" and the derivation of the 532,000 tons is shown as Verde area potential plus that of the 1205/Gold Stope and the Florencia areas.

Page 2, 2nd paragraph, raises the problem of fire underground becuase of the combustability of massive sulfide. There is an inference here that past operations of UVX had fires or fire hazards. This was certainly so at the United Verde where the main orebody was massive sulfide. Fire did not occur at the UVX where percautions were taken within the main copper orebody and where there is virtually no sulfide mineral content in the silica-rich areas under current exploration. We are distrubed to see this non-issue raised at a time when the real issues of defining potential warrant full attention.

Page 2, 4th paragraph, line 2, "ore bodies in the vicinity of 11,600N; 6,900E are rather flat...." Actually in this southeast part of the 809 zone dips are steep.

Although it is not our place to comment on direct mining issues, they are important in the definition of ore which is a joint exploration and engineering function. Hence, we are concerned that Mr. Janeck's memo does not fully appreciate what can go down or come up the existing shaft, as he suggests (page 2, last paragraph) using stope jumbus and load-haul dumps which would be a problem to get underground and (page 3, paragraph 7) that present plant capacity is 30 to

50 tons per 24 hours. This tonnage is currently hoisted in just a few hours. Consideration of a new shaft throws a new light on potential at UVX and would require a much expanded exploration target. We would like to see the definition of ore refined on the basis of the type of material, its size, shape, and grade, so that we can reasonably estimate reserves as the data are gathered. For this, direct negotiations with smelter customers must be recommended.

We do echo Mr. Janeck's concern for the problem with accurate location of present headings underground relative to old workings and do press for a reconciliation of surveys as soon as possible so that proper plans and sections will be ready when reserve calculations are to be done.

2) Drill holes 809-8 and 809-9.

Hole 809-8 was drilled at +33° from the 809 station to test the updip extension of intersections in hole 809-2 which was drilled at +23° from the 809 station. (fig. 1, RWH & DCW, Sept. 3, '87)

Hole 809-2 had the following intersections

Block 1, 19' true width, 0.33 oz/t Au, 1.4 oz/t Ag, 0.35 oz/t Au(eq), 2% Fe
Block 3, 12' true width, 0.07 oz/t Au, 2.0 oz/t Ag, 0.10 oz/t Au(eq), 4% Fe

Hole 809-8 had the following intersections

Block 1, 5' true width, 0.21 oz/t Au, 1.6 oz/t Ag, 0.24 oz/t Au(eq), 3% Fe
Block 3, 4' true width, 0.15 oz/t Au, 5.6 oz/t Ag, 0.24 oz/t Au(eq), 3% Fe

Hence, hole 809-8 diminishes width and grade of Block 1 and the width of Block 3, but increases grade of Block 3. In Block 1, grade x width for hole 809-2 is 6.6 and in 809-8 it is 1.2. In Block 3, grade x width for hole 809-2 is 1.2, and for hole 809-8 it is 1.0. A revision of the estimate of potential and calculation of a drill indicated reserve will follow reconciliation of surveys and construction of plans and vertical sections.

In hole 809-8 gold in excess of 0.10 oz/t occurs in and adjacent to a beige massive and banded chert breccia. As noted previously (Sept. 3) this rock type is typically barren.

Hole 809-9 was drilled at -5° and directed 20° south easterly of hole 809-3 from the 809 drill station. Hole 809-3 was not used in the September 3rd estimate of potential in the 809 zone as its 2 gold-bearing intersections are en echelon to the north and east and not contiguous with intersections in hole 809-2, the closest of the holes which define the 809 zone.

Hole 809-3 has the following intersections

7' true width of 0.21 oz/t Au, 0.4 oz/t Ag, 0.22 oz/t Au(eq), 3% Fe
5' true width of 0.15 oz/t Au, 1.5 oz/t Ag, 0.18 oz/t Au(eq), 5% Fe

Hole 809-9 had the following intersections

28' true width of 0.21 oz/t Au, 0.09 oz/t Ag, 0.21 oz/t Au(eq), 2% Fe
26' true width of 0.19 oz/t Au, 1.2 oz/t Ag, 0.21 oz/t Au(eq), 3% Fe
These are contiguous intersections and together are
54' true width of 0.20 oz/t Au, 1.0 oz/t Ag, 0.22 oz/t Au(eq), 2.5% Fe

The current interpretation is that these 2 holes may indicate a separate, en echelon part of the 809 zone, or that it may be an up plunge extension of the north end of the M-3 zone. We will be looking at these possibilities during map construction after reconciliation of underground surveys. The configuration of the diorite is critical in this area but from the present data compilation does permit continuity of the M-3 zone through holes 809-3 and 809-9 into the 809-zone.

3) Drill holes 902-1 and 902-2.

Hole 902-1, drilled S5°E and +40° is the first test of the 902 chert zone. It is collared in diorite at the 902 drill station, cut 165' of chert, and ended in the 824 stope. Most of this is the grey chert breccia, which, next to gritty chert breccia has been the most auriferous material encountered. However, in 902-1 there are only 3 assays intervals with more than 0.10 oz/t Au:

91-93,	0.199 oz/t Au,	7.82 oz/t Ag,	3% Fe
93-96,	0.11 oz/t Au,	1.68 oz/t Ag,	10% Fe
and 207-209,	0.102 oz/t Au,	2.65 oz/t Ag,	10% Fe

The visual inspection of the core from this hole is much more encouraging that the assays. There are significant assays in old working within 40 feet of the 207-209 interval in hole 902-1 and the impression is that a hole slightly more easterly and at a lesser inclination would intersect these permissive rocks with a greater gold content. We have seen this several times in the drilling program, most recently in the reverse sense where hole 809-8 has less gold in 2 separate intervals than the previously drilled, less inclined hole 809-2. The point is, we do not understand the gold distribution and cannot count on empirical relationships to hold over short distances. We will be looking into the similarities and differences in the chert breccias of holes 809-2 and 809-8.

Hole 902-2 has just terminated in tectonicly brecciated chert between hanging and footwall strands of the Verde fault and was to be the test of the area between fault strands. Assays are not yet in hand. There is approximately 15' of good looking gritty chert east of the hanging wall strand of the fault but none between fault strands where the hole terminated.

4) The 991 crosscut toward the 911 drill station.

The 906 crosscut has been reopened on the 950 level and sampled where it crosses that breccia on the south extension of the 1205/Gold Stope zone. These samples are reported in the DCW figure of October 19, 1987 in which the most significant are is 10' true width of 0.49 oz/t Au, 3.3 oz/t Ag for 0.55 oz/t Au(eq) in gritty chert breccia.

The new drive has left the old 906 at the west contact of hanging wall chert with diorite and is proceeding southeasterly as the 991 crosscut, totally within chert breccia. Assays have not yet been received for samples of the 991 crosscut. One striking feature of chert breccia in this new drive is the preponderance of beige massive and banded chert breccia in a hematite-rich matrix, and the increasing matrix support and vugginess of the breccia as are proceeds south. The openess of the breccia may reflect proximity to the Florencia fault, or something more primary.

Recommendations

1. Clearly the surveying has to be done now to resolve location of drill statons and new and old workings. We need to construct a new base at 1" to 40', or preferably 1" to 20' for reserve calculation in the near future and right now for location of drill holes relative to old workings and target zones. If other work precludes this work by staff then we would recommend it be done by contractors available as close as Mayer or Prescott.

2. Base map preparation which will be the foundation of planning and reserve calculation needs to be underway as soon as the survey grids are reconciled. It is recommended that DCW hire a draftsperson to make level plans at 1" to 40' of mine workings and drill holes with assay intervals as soon as possible. Otherwise we foresee a bottleneck upon completion of current drilling. DCW does not have the time to prepare the base maps while drilling is in progress.

3. Reserve calculations will benefit from an economic definition of ore, a definition which will extend the consideration of the natural cutoff in grade we have used to date in estimating and projecting potential. It would be of great help to have discussed the reasonableness of the smelter flux product originally envisaged versus a a multiproduct concept or a gold-only operation. The alternative is to do a reserve statement expressing the various options of products but it would help to guide this with a realistic look at what might be profitably marketed.

Carole

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

December 26, 1987

J. Thomas Nash
Research Geologist
U.S. Geological Survey
Branch of Geochemistry
Box 25046 M.S. 973
Denver Federal Center
Denver, CO 80225

Dear Tom,

Wish I could have been more prompt with these samples for you but at least they're in the mail, as I promised, before year end. What you should be receiving via U.P.S. are two boxes containing:

Box 1 - 9 samples, 902-1 thru 9

Box 2 - 12 samples, 906-4 thru 15

Each sample series represents a crosscut on the U.V.X. 950 level from E to W (top to bottom) of the "chert" body that contained the so-called Gold Stope (mined out in the 1930's) as per the accompanying plan. I have enclosed an assay histogram for each crosscut as well. On them you'll see the sample numbers with locations, dimensions, lithologies, and gold and silver assays.

Other things I've enclosed as background information are:

a) My Sept. 26, 1986 memo on "UVX ore classifications and characteristics" which demonstrates what a trimodal distribution exists between 1) base metal-(copper-) rich silica and gold-poor "sulfide" ores versus 2) siliceous base-metal and precious-metal ores versus 3) exceedingly silicious gold- and silver-only ores.

b) My March 17, 1987 memo on the "UVX gold project results; their significance to us and the geologic community, and some recommendations." That spells out some of the issues facing us which you may choose to attack. We can talk much more about that as studies advance.

c) Two drill logs, M-3 and 902-2, as examples of what we're cutting in the way of altered wall rock, chert bodies and mineralized chert.

d) Histograms of Au, Ag, Ag/Au, Cu, Pb, Zn, Cu + Pb + Zn, and Fe for hole M-3 so you can see what those metals do with respect to each other.

e) Ternary diagram of Au vs. Cu + Pb + Zn vs. Fe for the M-3 samples.

I hope each sample is large enough to cut thin and/or polished sections. For the best mineralized zones, I have sent larger samples so that you'll have more to work with. The silica grit is so friable that it will disintegrate

in any water or kerosene saw coolant. It will require special impregnation with a bonding agent prior to sample preparation.

If you first get an overview of the petrology and geochemistry of these two closely spaced crosscuts, we can then decide where to proceed. Some of the logical questions are:

1) What are the ore minerals? Their associates?

2) What can be learned of the ore mineral's genesis? Hydrothermal, metasomatic, metamorphic, or surface fluid borne?

3) What of the ubiquitous iron oxides and the near total absence of sulfides? Was this a case of supergene oxidation or possible hypogene or other oxidation? Is it a "gossan" as the old timers called it or is it something more complex and more interesting?

4) What makes silica grit? It is the most consistently well mineralized lithology. Is it decarbonatized silica-carbonate exhalite? Is it possibly an intensely silicified ash?

5) What is the origin or significance of all the silica breccias? Are they eruptive, in-situ explosive, chemically brecciated, or otherwise? We see evidence of each of these in various proportions depending upon location. Can one interpret breccia types to guide to or from eruptive centers, fumarolic vents or mineralizing centers?

6) Can various episodes of silicificaton be sorted out? There are various silica grain sizes and trace constitutents. Are any particular ones the hosts for Au and Ag?

These seem to be some of the issues anyway. If your studies can help lend to their understanding, we all stand to benefit. I have some ideas and interpretation already but have tried not to bias you too much on any issue. As you need more information or samples just give me a shout. I look forward to meeting you when you can get to visit.

Best wishes for 1988!

Sincerely,

Don White

Don White
Geologist, C.P.G.

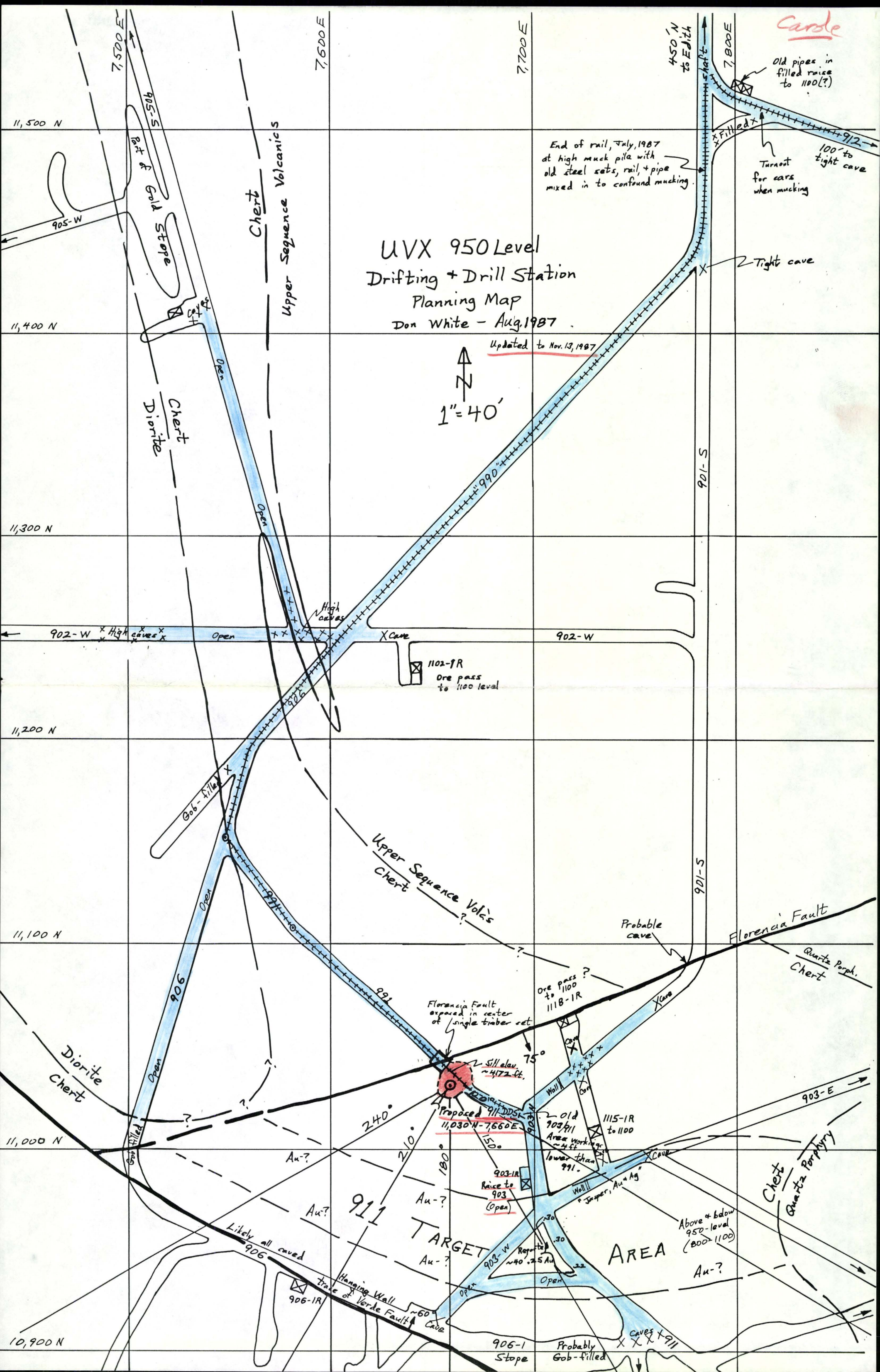
DW:sk

Enclosures

cc: Carole A. O'Brien
A.F. Budge

P.S. I must request confidentiality of the assay intercepts for now, as well as the third-party information such as the dealings with Phelps Dodge as on page 6 of my March 17, 1987 memo. We talked about these constraints on the phone and you indicated they'd be no problem. I expect that with a producing mine in the near future, the assay information will be more open.

DW


Carole
UVX 950 Level
Drifting + Drill Station
Planning Map
Don White - Aug. 1987
Updated to Nov. 13, 1987
1" = 40'
N
7,500 E
7,600 E
7,700 E
7,800 E
11,500 N
11,400 N
11,300 N
11,200 N
11,100 N
11,000 N
10,900 N
905-S
905-W
Part of Gold Stope
Chert
Upper Sequence Volcanics
Chert
Diorite
Open
Caves
450' N to Edith
Shaft
Old pipes in filled raise to 1100(?)
Filled
912
100' to tight cave
Turnout for cars when mucking
End of rail, July, 1987 at high muck pile with old steel sets, rail, + pipe mixed in to confound mucking.
Tight cave
991
901-S
High caves
902-W
Cave
1102-1R
Ore pass to 1100 level
906
Gob-filled
Upper Sequence Volcs
Chert
Florencia Fault
Probable cave
Quartz Porph.
Chert
Ore pass ? to 1100
1118-1R
Florencia Fault exposed in center of single timber set
75°
Sill elev. ~4172 ft.
Wall
Gob
903-E
Proposed 911 DDSL
11,030 N-7,660 E
903-W
Old 903/911 Area working ~4 ft lower than 991.
1115-1R to 1100
240°
210°
180°
150°
Au-?
911
TARGET
AREA
903-1R
Raise to 903 (Open)
Jasper, Au + Ag
Above + below 950-level (800-1100)
Chert
Quartz Porphyry
Likely all caved
906
Hanging Wall
Trace of Verde Fault
906-1R
~60'
Reported ~40 .25 Au
.30
.22
906-1 Stope
Probably Gob-filled
Caves
911

Carole

U.V.X. 902 D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole (feet)	Chert Intercepts	Angle of Intercept to Bedding
	Azimuth	Inclination			
902-1	175° (S5°E)	+40°	230	65-230+	~ 45°
902-2	200° (S20°W)	+14°	194	39-107 155-194+	~ 60°
902-3	230° (S50°W)	+25°	120	34-110	~ 60°
902-4	175° (S5°E)	+14°	215	50-215+	~ 45°
902-5	250° (S70°W)	+25°	Now drilling		
902-6	Last hole planned				

* 902 Diamond Drill Station; surveyed center of rotation of drill rig:

Mine grid 11,405N 7,215E 4,180' Elev.

Compiled by Don White
Updated to Nov. 17, 1987

U.V.X. 902 D.D.S. DRILLING/ASSAY SUMMARY

D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
902-1	+40°	.70	None	---	--	--	88-93 182-222	3.5 28	.15 .06	4.1 1.7
902-2	+14°	.87	82-105	20	.23	7.1	79-107	24	.21	6.1
902-3	+25°	.87	50-96	40	.13	7.3	50-110	52	.12	6.1
902-4	+14°	.70	Assays forthcoming							
902-5	+25°	Now drilling								
902-6	—	Last hole planned								

Compiled by Don White
Updated to Nov. 17, 1987

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

October 31, 1987

CHEMEX LABS, INC.
994 Glendale Ave.
Unit 7
Sparks, NV 89431

Dear Sirs:

Please perform one assay ton gold and silver fire assays with gravimetric finish on the nineteen (19) following pulp samples.

1	809-4 - 315-318
2	809-4 - 322-326
3	809-4 - 326-330
4	809-4 - 330-334
5	809-6 - 272-275
6	809-6 - 288-290
7	809-7 - 290-292
8	809-8 - 155-158
9	809-8 - 158-160
10	809-8 - 160-162
11	809-8 - 187-190
12	809-8 - 190-192
13	809-9 - 83-85
14	809-9 - 85-87
15	809-9 - 105-107
16	809-9 - 107-109
17	809-9 - 109-111
18	809-9 - 143-148
19	809-9 - 152-154

Please be sure to homogenize each pulp before taking your split for assay.

The report and billing should be sent to:

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

with a copy to me in Prescott, AZ. Also please promptly return the pulps to me at the Prescott address.

Thank you,

Don White

Don White
Geologist, C.P.G.

cc: Carole A. O'Brien

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

October 31, 1987

J. Thomas Nash
Research Geologist
U.S. Geological Survey
Branch of Geochemistry
Box 25046 M.S. 973
Denver Federal Center
Denver, CO 80225

Dear Tom,

Having received your letter of October 15, 1987, I am sorry to hear that you can't afford the trip to the U.V.X. Mine for familiarization and sample collecting. I would be happy to mail you samples if that would help expedite your study. I am disappointed by any delay because a 6-month hold now considerably diminishes the timeliness/usefullness of your insights to our exploration. By next spring/summer we may well be winding down exploration and phasing in to production. Extrapolating further, when your "possibly two year study" is complete, production may be substantially complete. Thus any publication then would really be a postmortem.

Let me know whether mailed samples are desireable and/or your trip may be rescheduled.

Regards,

Don White

Don White
Geologist, C.P.G.

DW:sk

cc: Carole A. O'Brien

Carole

809 D.D.S. DRILLING/ASSAY SUMMARY

D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
809-1	+23°	.70	200-214	10	.22	0.8	187-234	33	.15	1.4
809-2	+23°	.70	176-194	13	.44	1.5	156-209	37	.21	1.4
809-3	-5°	.57	55-68 326-343	7 10	.21 .21	0.4 1.2	50-68 287-343	10 32	.17 .15	0.4 1.0
809-4	+23°	.64	235-242 281-330	5 31	.24 .43	1.6 2.7	185-330	93	.22	2.5
809-5	+12°	.82	None	--	--	--	137-168	25	.15	1.1
809-6	+23°	.70	272-275	2	.57	1.7	207-218 249-275	8 18	.11 .14	2.6 1.4
809-7	+16°	.70	290-292	2	.35	3.6	254-263 283-298	6 10	.18 .10	1.3 2.3
809-8	+33°	.70	187-194	5	.21	1.6	152-206	38	.08	1.9
809-9	-5°	.70	93-109	11	.32	0.9	83-123	54	.20	1.0

Compiled by Don White
Updated to Oct., 1987

Carole

U.V.X. 809 D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole	Chert Intercepts	Angle of Intercept to Bedding
	Azimuth	Inclination			
809-1	205° (S25°W)	+23°	336	59-74 179-245 304-336	45°
809-2	185° (S5°W)	+23°	240	39-48 102-216	45°
809-3	170° (S10°E)	-5° (-7° at 280')	370	49-97 105-152 279-370+	35°
809-4	225° (S45°W)	+23°	369	157-369+	40°
809-5	185° (S5°W)	+12°	195	80-115 135-190	55°
809-6	218° (S38°W)	+23°	339	149-339+	45°
809-7	225° (S45°W)	+16°	335	234-335+	45°
809-8	185° (S5°W)	+33°	235	152-229	45°
809-9	150° (S30°E)	-5°	187	71-169	45°
809 D.D.S. RANGES/TOTALS:	9 holes	150° thru 225° (75° lateral fan)	-5° to +33° (38° vertical fan)	2,606 feet drilled	1190 feet drilled in chert	35° to 55°

*809 D.D.S. location; U.V.X. Mine - 800 level
Mine grid 11,790 N, 6,905E, 4,325 Elev.

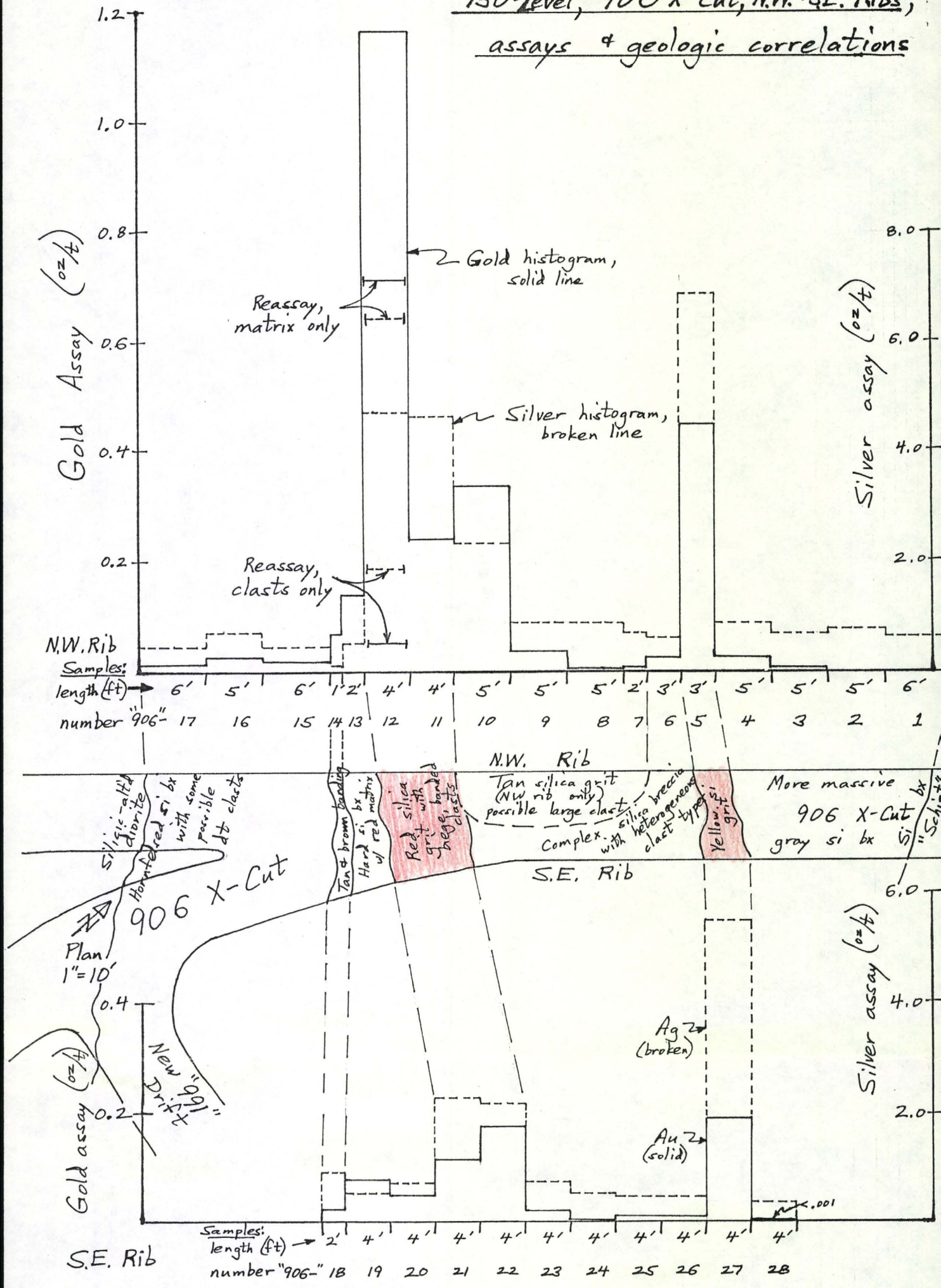
Compiled by Don White
Updated to Oct., 1987

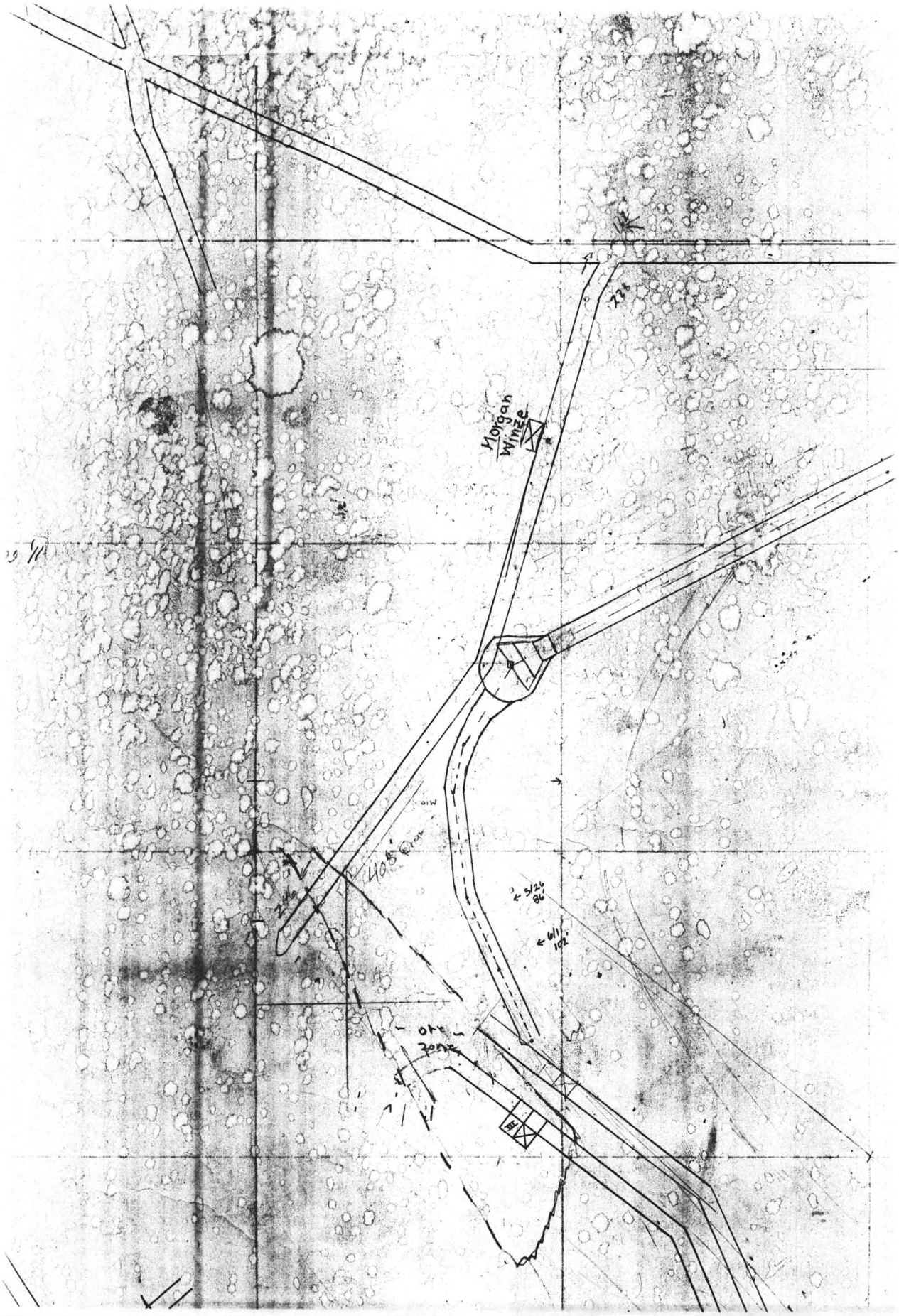
Carole

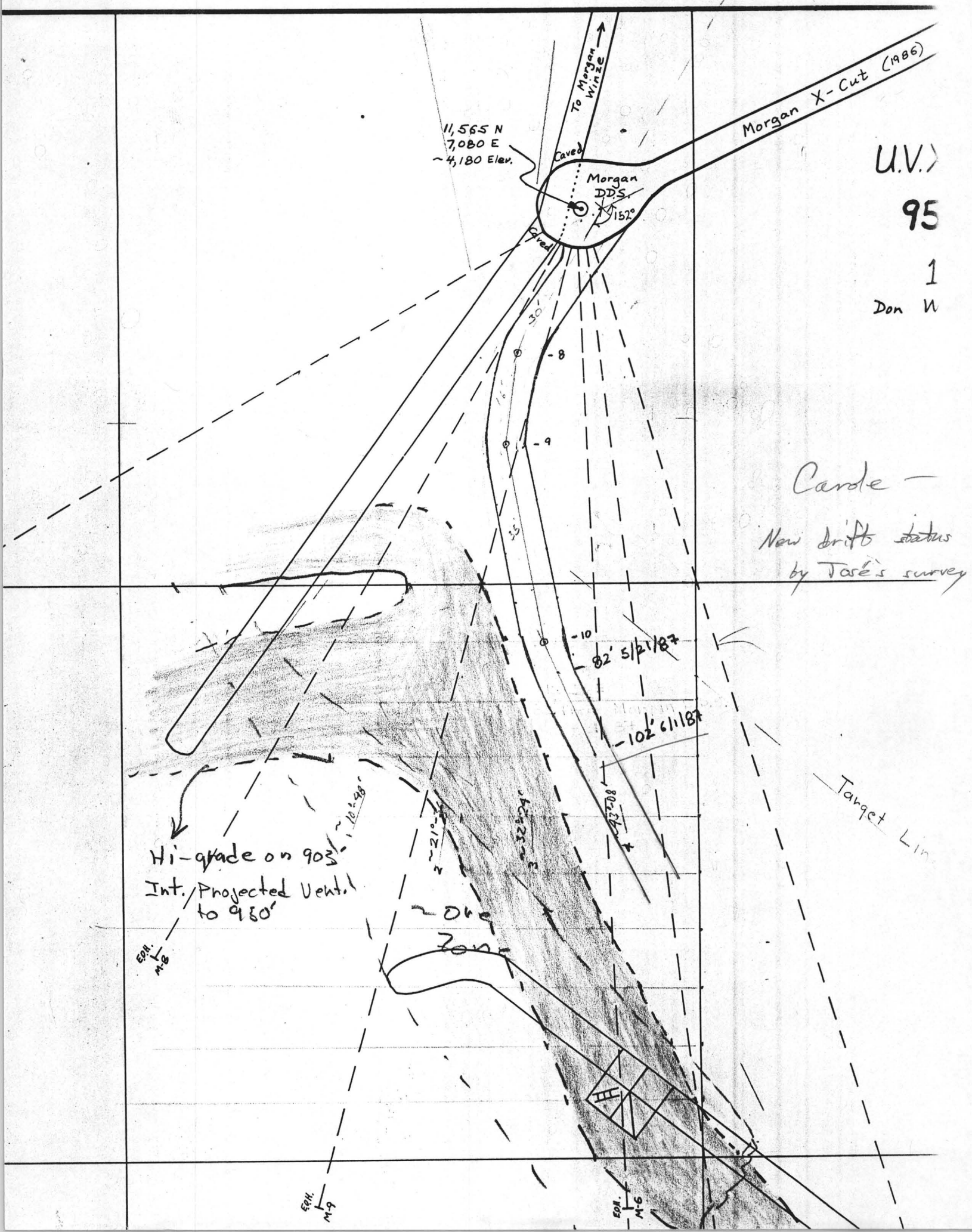
U.V.X. Gold Project

Don White - Nov 1, 1987

950-level, 906 X-Cut, N.W. + S.E. Ribs, assays & geologic correlations



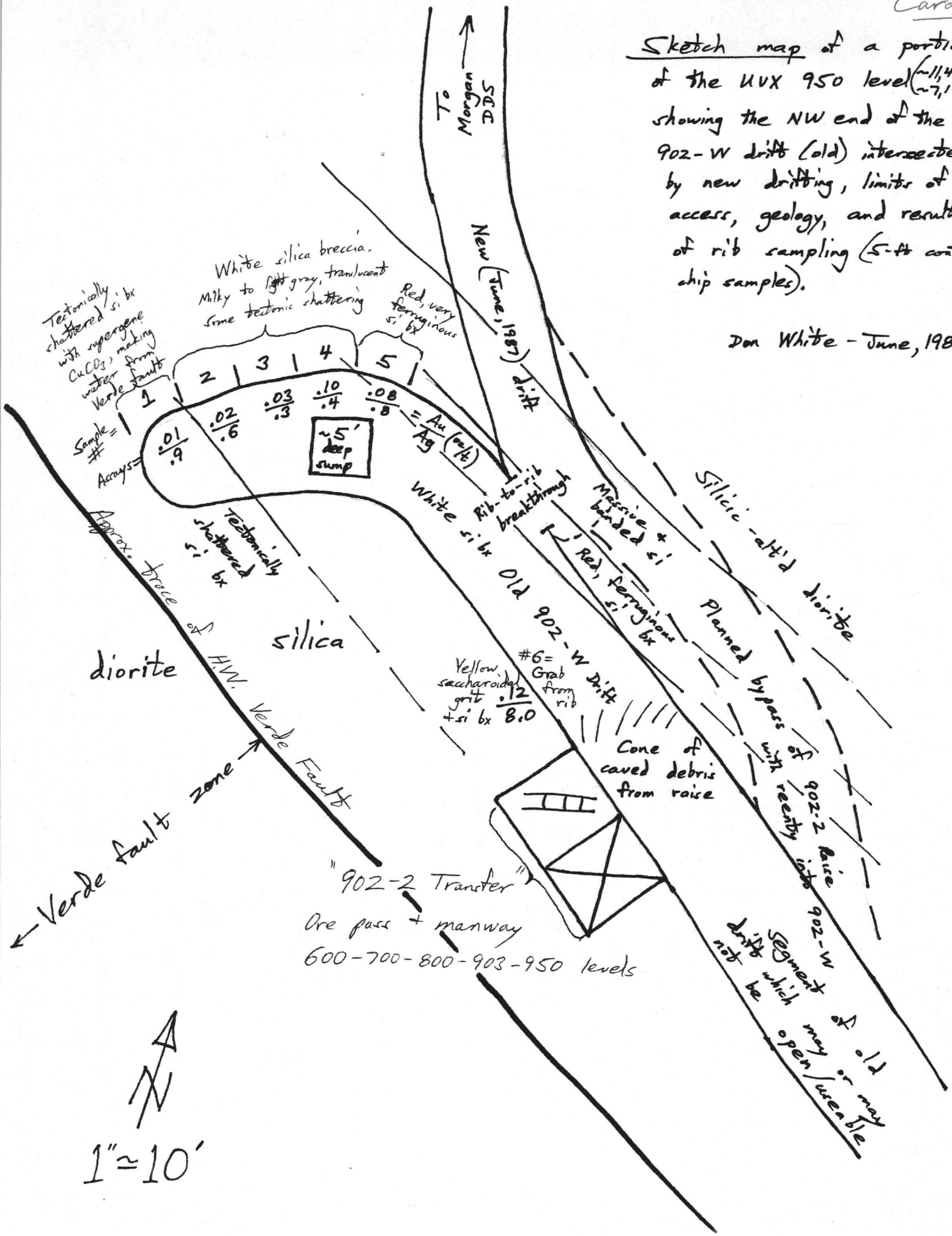

Morgan Winze
238
408'
5/26 86'
611 102'
ore zone


To Morgan Winze
Morgan X-Cut (1986)
11,565 N
7,080 E
~4,180 Elev.
Caved
Morgan DDS
152°
Caved
30'
-8
-9
35'
-10
82' 5/21/87
102' 6/1/87
Target Line
Hi-grade on 903'
Int./Projected Vent. to 950'
~Ore Zone
EOH. M-8
EOH. M-9
EOH. M-6
U.V.
95
1
Don
Carole —
New drift status by Jose's survey

Carde

Sketch map of a portion of the UVX 950 level (~11,400 N ~7,100 E) showing the NW end of the 902-W drift (old) intersected by new drifting, limits of access, geology, and results of rib sampling (5-ft cont. chip samples).

Don White - June, 1987



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

September 11, 1987

Dr. R.W. Hodder
20 Mayfair Drive
London Ontario
Canada N6A 2M6

Dear Bob,

Thanks again for the help and guidance on the U.V.X. project and also for the time spent reviewing my little paper on the Vulture.

I've enclosed a copy of our U.V.X. memo with colored graphics. I did end up redoing the 809 reserve block figure so that I could fit in all the accessory data we talked about.

Drilling will resume from the 809 D.D.S. on Sept. 21, double shift. We'll drill the two shorter holes there first and then may or may not do the 400 foot hole to test west of 809-4.

If indeed you're down for GSA in October see whether you can swing a few days immediately after that, say Oct. 29 through 31 or Nov. 1. If not, we'll see about a November visit or during the U.W.O. exam period in December.

Best Regards,

Don

Don White
Geologist, C.P.G.

cc: Carole A. O'Brien

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

September 11, 1987

J. Thomas Nash
U.S. Geological Survey
Geochemistry Branch
Bldg. 25 - Federal Center
Denver, CO 80225

Dear Tom,

I appreciate your inquiry by phone a week ago. Indeed we should enjoy having you and the U.S.G.S. working on some aspect of the U.V.X. chert-hosted gold study. I understand your interest is mainly mineralogic and petrologic.

There is a question which you may be the best suited to answer. It involves the origin of the so-called U.V.X. "gossan" which we are calling the chert breccia and which hosts all the known gold occurrences at the U.V.X. From the 1920's through Anderson & Creasy's 1958 Professional Paper, the "gossan" was viewed as exactly that. But we wonder whether it really is gossan after sulfides or whether it has a more chemical exhalative origin, albeit reworked and silica-healed.

The chert breccias we are exploring are most dramatic for internal structure and mineralogy. We now have many drill cores and three underground crosscuts through various of the chert zones and thus a wealth of samples to share.

Is it possible that you are interested in pursueing this or related issues? If so, be in touch and we'll figure out what you'll need for samples. If per chance you'll be down for the GSA meeting next month maybe you'd wish to visit the project to see our cores, plans, sections, and underground exposures. You're welcome.

Looking forward to your response.

Regards,

Don White

Don White
Geologist, C.P.G.

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

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

September 15, 1987

J. Thomas Nash
U.S. GEOLOGICAL SURVEY
Box 25046 M.S. 973
Denver Federal Center
Denver, CO 80225

Dear Tom,

I have received your letter of Sept. 3rd, which probably crossed in the mail with my own of the 11th. Thank you for your open-file report on gold in the Blackbird District and your abstract on gold at the Big Canyon and Vandalia Mines.

From your letter it is clear you are offering us what we have suggested to you, and what could benefit both of our projects. I see no reason it should not be commenced as soon as practical. Indeed, simply call regarding a schedule to visit Jerome and we'll set it up.

Sincerely,

Don White

Don White
Geologist, C.P.G.

DW:sk

cc: Carole A. O'Brien

Cande

United States Department of the Interior

GEOLOGICAL SURVEY
BOX 25046 M.S. 973
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

Branch of Geochemistry

IN REPLY
REFER TO:

September 3, 1987

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

Dear Don:

I would like to amplify on our telephone conversation regarding the possibility of doing research on the geology and geochemistry of gold in the massive sulfide systems at Jerome. The recent publications by you and by Dewitt and Waegli narrow the target for gold and also demand confirmation by new detailed studies. The concepts that gold is enriched in the youngest or most siliceous parts of the evolving system are very interesting and logical, and they fit with some volcanogenic systems I've looked at elsewhere. I am interested in trying to confirm these relations and provide as much descriptive information as possible. The success of such research will largely depend on the availability of appropriate samples from mine exposures or drill core, and possibly from outcrop.

For the past few years, on a part-time basis, I've been trying to locate and characterize gold in some volcanogenic systems. The examples at Blackbird and Vandalia, described in the enclosed material, probably are not typical systems, but they do contain gold. It is reassuring to be able to locate gold in polished sections and attempt to relate it to other ore minerals or alteration, as well as rock chemistry. We have had good luck in finding gold if the samples selected had more than about 0.5 g/t; often it's a matter of patience in scanning the polished sections. I rely on assays to focus my sampling.

You clearly are tracking gold at UVX and you have many good observations and ideas. I would enjoy building upon your experience and collaborating with you on the project as it evolves. In my other projects the industry work was dead and the project geologists had moved on to other areas--there were good research problems and materials, but the petrology and geochemistry was not developed as effectively as it could have with a site geologist. You are in the best position to know the best targets for sampling. Also, the work I'm inquiring about really should be of interest to you--so I would welcome your suggestions for topics to pursue within the scope of major and minor element chemistry and petrology-mineralogy. I suspect this type of research would have to unwind gradually as topics and samples are identified, but I would hope to be able to bring results together in a year or two and begin a writeup for publication. Your participation in the research, interpretation, and writeup would be most welcome, and I think that would make the research most useful to you.

It is possible that this proposed research would partly duplicate work you have underway with Prof. Hodder. If it doesn't take up a lot of your time the duplication might be a useful exercise to see if the same type of results and observations come from the two labs. I do not wish to deliberately duplicate Hodder's work, but a certain amount would be necessary for me to get oriented and to learn for myself about the ores and host rocks. As for scale, my estimate would be about 100 thinsections and analyses for a start. There would be no cost to you.

If this general proposal is attractive to you and seems workable, please let me know. A brief visit to Jerome might be a good way to introduce me to the realities of tracking gold in those complex deposits.

Sincerely yours,

Tom Nash

J. Thomas Nash
Research Geologist

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UQX 052
September 22, 1987

DMEA LTD.
SEP 24 1987
RECEIVED

MR. DON WHITE
521 East Willis St.
Prescott, AZ 86301

Analysis of 20 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	FIRE ASSAY Ag (oz/t)	IRON KING Au	IRON KING Ag
1	809-4-315-318	.810	.41	0.978	1.97
2	809-4-318-322	2.545	3.05	2.540	3.84
3	809-4-322-326	.445	1.61	0.570	1.87
4	809-4-326-330	.090	.05	0.245	8.03
5	809-4-330-334	.060	.22	0.079	2.14
6	809-5-135-137	.005	.57		
7	809-5-137-140	.135	1.12		
8	809-5-140-142	.055	.74		
9	809-5-142-145	.090	1.59		
10	809-5-145-148	.250	.91		
11	809-6-264-267	.110	1.07	0.116	0.93
12	809-6-267-270	.020	.84	0.023	0.75
13	809-6-270-272	.060	1.00	0.083	0.97
14	809-6-272-275	.050	1.33	0.571	1.69
15	809-6-275-278	.005	.39	0.009	0.32
16	809-7-283-286	.065	1.07	0.080	1.69
17	809-7-286-288	.040	1.07	0.052	3.36
18	809-7-288-290	.075	3.56	0.063	1.25
19	809-7-290-292	.275	1.77	0.348	3.56
20	809-7-292-294	.040	1.13	0.041	0.24

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DESIGNED Arizona U.S.A.

cc: Mr. Don White

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

INVOICE
NET 30 DAYS

JOB NO.UQX 052
September 22, 1987

A.F. BUDGE (MINING) LIMITED
Attn: Ms. Carole A. O'Brien
DMEA Ltd.
7340 E. Shoeman Lane, 111-B (E)
Scottsdale, Arizona 85251

Analysis of 20 Pulp Samples

20 Au&Ag(oz/t) @ $ 8.50.....$ 170.00

TOTAL $ 170.00

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

INVOICE
NET 30 DAYS

JOB NO.UQX 052
September 22, 1987

A.F. BUDGE (MINING) LIMITED
Attn: Ms. Carole A. O'Brien
DMEA Ltd.
7340 E. Shoeman Lane, 111-B (E)
Scottsdale, Arizona 85251

Analysis of 20 Pulp Samples

20 Au&Ag(oz/t) @ $ 8.50.....$ 170.00

TOTAL $ 170.00

COPY

809 D.D.S. DRILLING/ASSAY SUMMARY

D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
809-1	+23°	.70	200-214	10	.22	0.8	187-234	33	.15	1.4
809-2	+23°	.70	176-194	13	.44	1.5	156-209	37	.21	1.4
809-3	-5°	.57	55-68 326-343	7 10	.21 .21	0.4 1.2	50-68 287-343	10 32	.17 .15	0.4 1.0
809-4	+23°	.64	235-242 281-330	5 31	.24 .43	1.6 2.7	185-330	93	.22	2.5
809-5	+12°	.82	None	--	--	--	137-168	25	.15	1.1
809-6	+23°	.70	272-275	2	.57	1.7	207-218 249-275	8 18	.11 .14	2.6 1.4
809-7	+16°	.70	290-292	2	.35	3.6	254-263 283-298	6 10	.18 .10	1.3 2.3

Compiled by Don White
Updated to Aug., 1987

U.V.X. 809 D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole	Chert Intercepts	Angle of Intercept to Bedding
	Azimuth	Inclination			
809-1	205° (S25°W)	+23°	336	59-74 179-245 304-336	45°
809-2	185° (S5°W)	+23°	240	39-48 102-216	45°
809-3	170° (S10°E)	-5° (-7° at 280')	370	49-97 105-152 279-370+	35°
809-4	225° (S45°W)	+23°	369	157-369+	40°
809-5	185° (S5°W)	+12°	195	80-115 135-190	55°
809-6	218° (S38°W)	+23°	339	149-339+	45°
809-7	225° (S45°W)	+16°	335	234-335+	45°
809 D.D.S. RANGES/TOTALS:	7 holes	S10°E thru S45°W (55° lateral fan)	+12° to +23° (11° vertical fan)	2,184 feet drilled	1,015 feet drilled in chert	35° to 55°

*809 D.D.S. location; U.V.X. Mine - 800 level
Mine grid 11,790 N, 6,905E, 4,330 Elev.

Compiled by Don White
Updated to Aug., 1987

U.V.X. MORGAN AREA DRILLING/ASSAY SUMMARY

Drill Fence	D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
	806-1	-4°	.87	514-527 568-578	11 9	.24 .18	2.2 0.9	504-594	78	.09	1.4
Fence 5 Morgan DDS	M-1	+42°	.87	122-138 157-176	14 16	.24 .23	1.5 1.6	122-176	47	.17	1.1
	M-2	+60°	1.00	124-136	12	.16	1.5	118-150	32	.10	1.4
Fence 3 Morgan DDS	M-3	+20°	.70	151-185	24	.88	32.5	146-233+	61+	.41	14.6
	M-4	+50°	.50	107-130 190-203	12 7	.14 .29	3.4 2.1	107-235	64	.09	1.8
	M-5	+10°	.70	None	--	--	--	None	--	--	--
	M-6	+30°	.70	158-178	14	.40	5.2	148-195+	33+	.26	6.7
Fence 5	M-7	+25°	.87	None	--	--	--	None	--	--	--
Fence 4	M-8	+40°	.87	90-94 107-118	4 10	.22 .17	3.7 0.6	90-144	47	.10	1.0
S15°W	M-9	+20°	.77	104-121	13	.39	1.8	104-157	41	.19	1.6
S17°E	M-10	+23°	Deflected	None	--	--	--	None	--	--	--
S7°E	M-11	+25°	.70	168-177 190-210+	6 14+	.32 .33	9.7 7.4	168-210+	29+	.26	7.3

Compiled by Don White
May, 1987

U.V.X. MORGAN D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole	Chert Intercepts	Angle of Intercept to Bedding
	Azimuth	Inclination			
806-1 (1)	223.5° (S33.5°W)	-4° (-12° at 600')	633	84-108 481-615	60°
M-1	240° (S60°W)	+42° (+45° at 250')	262	70-247	60°
M-2	240° (S60°W)	+60°	226	76-85 109-205	90°
M-3	178° (S2°E)	+20°	233	131-233+	45°
M-4	178° (S2°E)	+50° (+48° at 290')	295	100-280	30°
M-5	178° (S2°E)	+10°	198	164-198+	45°
M-6	178° (S2°E)	+30°	195	148-195+	45°
M-7	240° (S60°W)	+25°	129	84-114	60°
M-8	210° (S30°W)	+40°	187	74-187+	60°
M-9	195° (S15°W)	+20°	183	83-183+	50°
M-10	163° (S17°E)	+23°	278	None	Deflected
M-11	173° (S7°E)	+25°	210	152-210+	45°
Morgan D.D.S. RANGES/TOTALS:	11 holes	S17°E thru S60°W (77° lateral fan)	+10° to +60° (50° vertical fan)	2,396 feet drilled	946 feet drilled in chert	30° to 90°

*Morgan D.D.S. location; U.V.X. Mine - 950 level - Mine grid 11,565 N, 7,080E, 4,177' Elev.
(1) 806 D.D.S. location; U.V.X. Mine - 800 level - Mine grid 11,890 N, 7,335E, 4,335' Elev.

Compiled by Don White
Updated to Aug., 1987

Carole

Don White
Aug. 1987

Proposed UVX 911 Drilling

Drill Section	Incl.	Length of Hole	Fence Subtotals	Hole Priority
120°	−30°	220′	910′	10
	−10°	200′		
	+20°	150′		
	+40°	340′		9
150°	−20°	170′	670′	2
	+10°	130′		1
	+40°	370′		3
180°	−20°	130′	650′	5
	+10°	100′		
	+30°	160′		4
	+50°	260′		
210°	−10°	120′	430′	7
	+15°	120′		
	+40°	190′		6
240′	−10°	120′	470′	8
	+15°	170′		
	+40°	180′		
TOTALS	120° lateral spread	80° vertical spread	3,130′ feet overall (all chert!)	

5 fences, 17 holes

Carole

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

September 8, 1987

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

Dear Paul,

Expecting that upon your return from Alaska you'll be curious to know what's new at the U.V.X., I have put together for you copies of the following items:

1) U.V.X. plan, 950 level, 1" = 20', Morgan and 902 D.D.S.'s; Don White, Aug. 1987

2) M-3 zone plans and sections, 1" = 20', set of 4 plans, 3 vertical X-sections, 1 vertical long. section, 3 oblique sections, and 1 projected section with isopachs/isograds; Don White, May, June, 1987

3) 809 Area sections, 1" = 20', set of 2 vertical X-sections and 1 inclined section; Don White, Aug. 1987

4) Drill logs, 1" = 20', for M-11 (you have thru M-10 already), and 809-1 thru 809-7

5) Bulk density, insolubles/SiO_2, and cyanide bottle roll tests reports by Iron King Assay, Inc.

6) Four (4) pages of summary charts of drill hole data and intercepts for Morgan and 809 areas; Don White, updated through August, 1987

As in the past, all the copies are black and white and hence reproduceable. Many of the sections, plans, and logs, however, are only useful when colored and should you wish to color any copies you're welcome to use my copies at the U.V.X. as guides.

Sincerely,

Don

Don White
Geologist, C.P.G.

DW:sk

cc: Carole A. O'Brien
A.F. Budge
P.A. Lindberg

A.F.B.

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

September 8, 1987

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

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5) Bulk density, insolubles/SiO_2, and cyanide bottle roll tests reports by Iron King Assay, Inc.

6) Four (4) pages of summary charts of drill hole data and intercepts for Morgan and 809 areas; Don White, updated through August, 1987

As in the past, all the copies are black and white and hence reproduceable. Many of the sections, plans, and logs, however, are only useful when colored and should you wish to color any copies you're welcome to use my copies at the U.V.X. as guides.

Sincerely,

Don

Don White
Geologist, C.P.G.

DW:sk

cc: Carole A. O'Brien
A.F. Budge
P.A. Lindberg

M E M O

TO: Carole A. O'Brien, A.F. Budge

FROM: Don White

DATE: August 26, 1987

SUBJECT: 809, 902, and 911 drilling at the U.V.X.

U.V.X. drilling has been completed through D.D.H. 809-7. The Longyear crews were needed on another project in Nevada simultaneous with your unwillingness to commit to any further drilling and so an agreement was reached with Longyear to leave the rig on the 809 D.D.S. and let the crew go temporarily. The diesel compressor is also gone. Longyear has now said they will not resume drilling without a rate increase which is the subject of current negotiation. //

As of today we are just 70 feet (new X-cut) from the planned 902 D.D.S. and about 600 feet (half rehab., half new drifting) from the designated 911 D.D.S. The 902 drill sections were provided previously and 911 drill sections accompany this memo. Three 809 sections have also recently been provided.

The 809 sections make it clear that one or two final holes are very desireable from the 809 D.D.S. My priority hole is the one up-dip from 809-2 (see section 809-185°). That is necessary to test the elevation of the Tertiary unconformity and hence the height of the economic grade mineralization. That zone is substantial thickness high grade gold, low iron; easily direct-shipping, flux-quality, gold ore. The up-dip hole alone may well delineate another 5-10,000 tons or about $1 million worth of gold. But more importantly, it will test the upward continuity of what is now a very small body (20'-40' thick, 40'-70' high, 100'-120' long) of high-grade and thereby beef up its size to something more likely to be economic. The up-dip additional reserves are well above the 700-level and thus not practically testable by drifting/raising from the 809 area. Neither would drilling from any closer be recommended as the inclination would be too steep and the angle of intercept too acute. Furthermore, testing it with a smaller drill rig would not likely work in this case since long (240') up-holes in chert require a very powerful machine. Such a machine is there on the station now and ought to be utilized.

The possibility of demobilizing Longyear's rig from the 809 station and coming back for a final hole or two later is not desireable. The information has more utility sooner. Future drilling may be conducted with an electric rig rather than pneumatic and hence the 1,200 feet of air line would have to be torn down and substituted by 440 volt electrics, no cheap task. Add to that an additional 3-shift moving charge in and out (total about $4,000.) and you see why I wish the 809 drilling to be completed by Longyear.

The drilling particulars (azimuths, inclinations, lengths, and priority) for the 902 and 911 drilling are summarized on the accompanying tables. So

too are the guidelines I have been using in calls to and from other potential drilling contractors. Thus far, amongst those I have talked to, no one seems anxious for the job. Fausett never even called back. Roen took a long time to even make the inquiry call, can't get to it for "at least 6 weeks", and may or may not submit a bid. A.M.S. has been contacted and will take a while to get a bid together. We have already eliminated Boyles, Connors, and Centennial. If neither A.M.S. or Roen come through, we better drive for the best deal we can make with Longyear. If A.M.S. or Roen were contracted to drill on the 902 with an electric rig, that would be compatable with Longyear's simultaneous completion of the last 809 hole or two with their air rig.

DW:sk

Carole

Don White
Aug. 1987

U.U.X. Drilling Parameters as Discussed with Potential Drilling Contractors (e.g., Longyear, Roen, AMS, Faucett, etc.)

1) Two (+?) stations (902, 911 ± 906)

2) 3,000' (+?) minimum footage (1,500 ft/station ± fill-in, e.

3) Longest hole ≤ 400 ft $\bar{X}$ = 180 ft.

4) − 30° to + 60° inclinations (90° spread)

5) HQ + BQ equipment + capability though most drilling to be NQ core

6) 902 station to be ~60% chert drilling
911 station to be ~100% chert drilling

Status and Proposed Plan of Operations

U.V.X. Property

800 Level

Hole 809-6 currently at 250 ft., with about 100 ft. more to drill. If holes 809-7 and 8 are drilled, at 350 ft. each, drilling should end in about 5 weeks, or at the end of August.

Ore Pocket and Hoisting Facilities

Allowing for minor adjustments, we should be hoisting muck next week.

950 level

An attempt will be made to clean out the 902 transfer raise for access to the 903 intermediate level.

Crew will also attempt to access the old drift (part of the 902-W).

If raise and drift are impassable, a new drift will be driven to the 902 drill station, approximately 220 feet east of our present position at the raise.

With 2 crews and an advance of 55 ft. per week, this station should be reached in 4 weeks.

Allowing no more than 1 week in attempts to clear raise and access old drift, this station could be reached by the end of August (coinciding with end of drilling from 809 station).

With 2 additional crews, which would add another $8,000 to $10,000 to our payroll, we could be working the 902 drift and the 901-S drift simultaneously.

Alternatively, the second crews could work any of the following:

(1) if 902 transfer raise is impassable, second crew could start a parallel raise to the 903 intermediate level into the M-3 Zone;

(2) second crew could work on access to Morgan Raise, a distance of 60 feet from our Morgan cross-cut to provide (a) access to 805 drift on 800 level, and (b) additional ventilation.

(3) if Morgan Raise could be opened, drifting could be possible on the 800 level, with muck passed down the raise for disposal via 950 level pocket and loading facility.

(4) second crew could drift on 800 level from the 809 station, however, muck would have to be slushed back into the 809 or 810 drift.

Once the 902 drill station is completed, we should continue on to the 906 drill station farther to the southeast (280 ft.), advance south on the 901 (450 ft.), then connect these 2 stations (300 ft.).

Without the addition of the four alternatives above, this work totalling 1030 feet of new and old drift, will take a minimum of 200 shifts for a 2-man crew advancing 5 ft/shift.

Obviously, with more crews and more working faces, the time to complete the work will be shortened considerably.

~~DCW-FYI.~~

DAWSON
METALLURGICAL
LABORATORIES, INC.

P.O. Box 7685
5217 Major Street
Murray, Utah 84107-0685
Phone: 801-262-0922

June 29, 1987

Millsaps Mineral Service, Inc.
3865 Wasatch Blvd.
Room 2021
Salt Lake City, Utah 84109

Attn: Mr. Frank W. Millsaps

Subject: Results of Screening and Cyanide Leach Testing a Sample of United Verde Extension ore. Our Project No. P-1377.

Gentlemen:

In accordance with discussions with Mr. Frank Millsaps, several laboratory tests were performed on a sample of United Verde Extension ore to determine both gold occurence and gold extraction by cyanide leaching. Testwork performed included:

- Assay Screen of Minus 1 1/2 Inch Head Ore Sample
- Bottle Roll Agitation Leach of Minus 1 1/2 Inch Ore Sample for 72 Hours Followed by Assay Screen of Leach Residue.

Carole

I. Sample Description and Head Analysis

/like heck – I sent 10"–12" blocks too!

Four boxes of minus 4 inch ore sample were recieved at our laboratory May 28, 1987 and assigned Our Lot No. P-1377. The contents of each box were combined to produce a 200 pound sample which was crushed through 1 1/2 inch. Twenty-five kilograms of this sample was split out for a head assay screen and 5 kilograms was split out for a 72 hour bottle roll cyanide leach test. Back-calculated head assays from these tests are presented below:

2140# sent

P-1377: Millsaps Mineral Service
Back-Calculated Head Assays: -1 1/2 Inch Sample

Test No.	Head Assay, oz/Ton Au	Ag
1 (Assay Screen)	0.102	3.18
2 (72 hr. Bottle Roll)	0.110	3.24

Conde

809 D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole	Chert Intercepts	Angle of Intercept to Bedding	Remarks
	Azimuth	Inclination				
809-1	205° (S25°W)	+23°	336	59-74 179-245 304-336	45°	
809-2	185° (S5°W)	+23°	240	39-48 102-216	45°	
809-3	170° (S10°E)	-5° (-7° at 280')	370	49-97 105-152 279-370+	35°	
809-4	225° (S45°W)	+23°	369	157-369+	40°	
809-5	185° (S5°W)	+12°	195	80-115 135-190	55°	
809-6	218° (S38°W)	+23°	339	149-339+	45°	
809-7	225° (S45°W)	+16°			45°	

*809 D.D.S location; U.V.X. Mine - 800 level
Mine grid 11,790N
6,905E
4,330 Elev.

Compiled by Don White
Updated to July, 1987

Carole

809 D.D.H. DRILLING/ASSAY SUMMARY

D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
809-1	+23°	.70	200-214	10	.22	0.8	187-234	33	.15	1.4
809-2	+23°	.70	170-184	13	.44	1.5	156-209	37	.21	1.4
809-3	[illegible]	.57	55-68 326-343	7 10	.21 .21	0.4 1.2	50-68 287-343	10 32	.17 .15	0.4 1.0
809-4	[illegible]	.64	235-242 281-330	5 21	.24 .43	1.6 2.7	185-330	93	.22	2.5
809-5	+12°	.82	None	--	--	--	137-168	25	.15	1.1
809-6	+23°	.70	None	--	--	--	249-275	18	.14	1.4
809-7	+16°	.70								

Compiled by Don White
Updated to July, 1987

MEMO

To: A.F. Budge

From: A.J. Fernandez

Date: July 16, 1987

Subject: UVX Loading Station Status

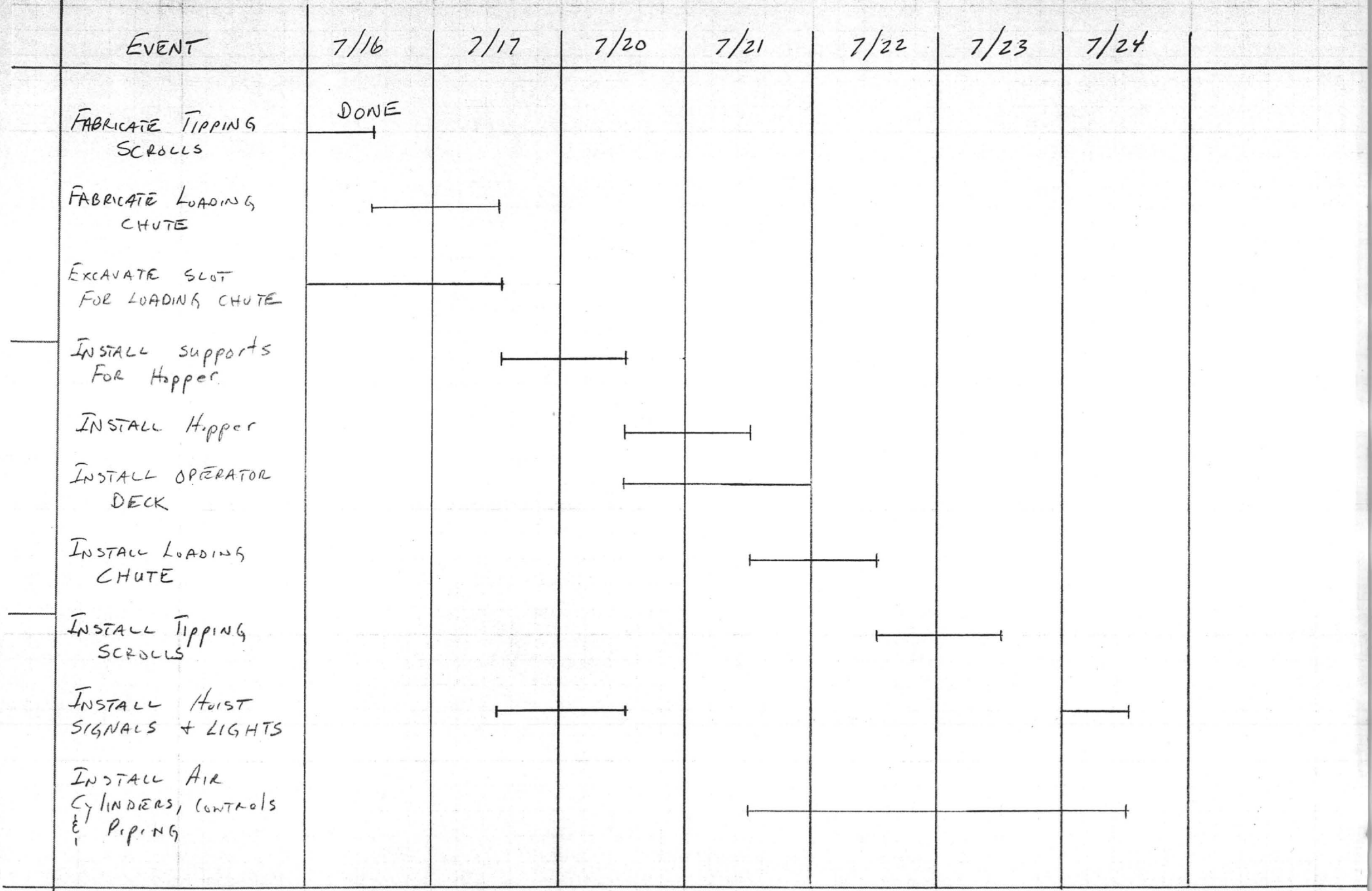
Attached is schedule of the work remaining to complete the loading station. The remaining material, equipment and surface fabrication will be on site and complete tomorrow. As luck would have it, the point in the shaft wall where we need to locate the loading chute is 32 inches thick for about 3 vertical feet. Hence, we are using pneumatic hammers to remove the concrete. This work and additional rock excavation should be complete by end of day shift tomorrow. The next step is to stand columns to support the hopper and operator deck. The loading chute will then be lowered in two pieces and installed. The loading chute is supported by the shaft wall and the floor of the excavation. Once the chute is positioned the tipping scrolls can then be installed. These tipping scrolls will position the skip closer to the loading chute minimizing spillage. Utilities and hoist signals will be installed as structural components providing mounting locations are installed. Howard and I agree on Friday the 24th as an attainable target for testing the system. Undoubtedly minor fine tuning will then be necessary.

As to your question whether we have a "Rolls Royce or a Chevrolet?", I would call it a "cheap Buick". It is a little

better than the bare minimum, simple and easy to operate and maintain.

Between myself, APS, Howard, Gordon of Az. Pneumatics and Dave of AGM, a detailed outline of our options to power a new compressor is in the works.

LOADING STATION WORK Schedule



UVX

Options from 901-S to Florencia Target

There are three choices from the caved intersection of the 990 and 901-S. To make a decision we must first clear the intersection, then evaluate the condition of the drifts. The first option is to rehabilitate the 901-S. Second, rehabilitate the 990. Third, advance a new drift from a point near the powder magazine following the grid line 7700E. These are outlined below.

Option 1: Rehab 450 feet of 901-S at $175 per foot for $78,750. Requires 6 weeks to complete.

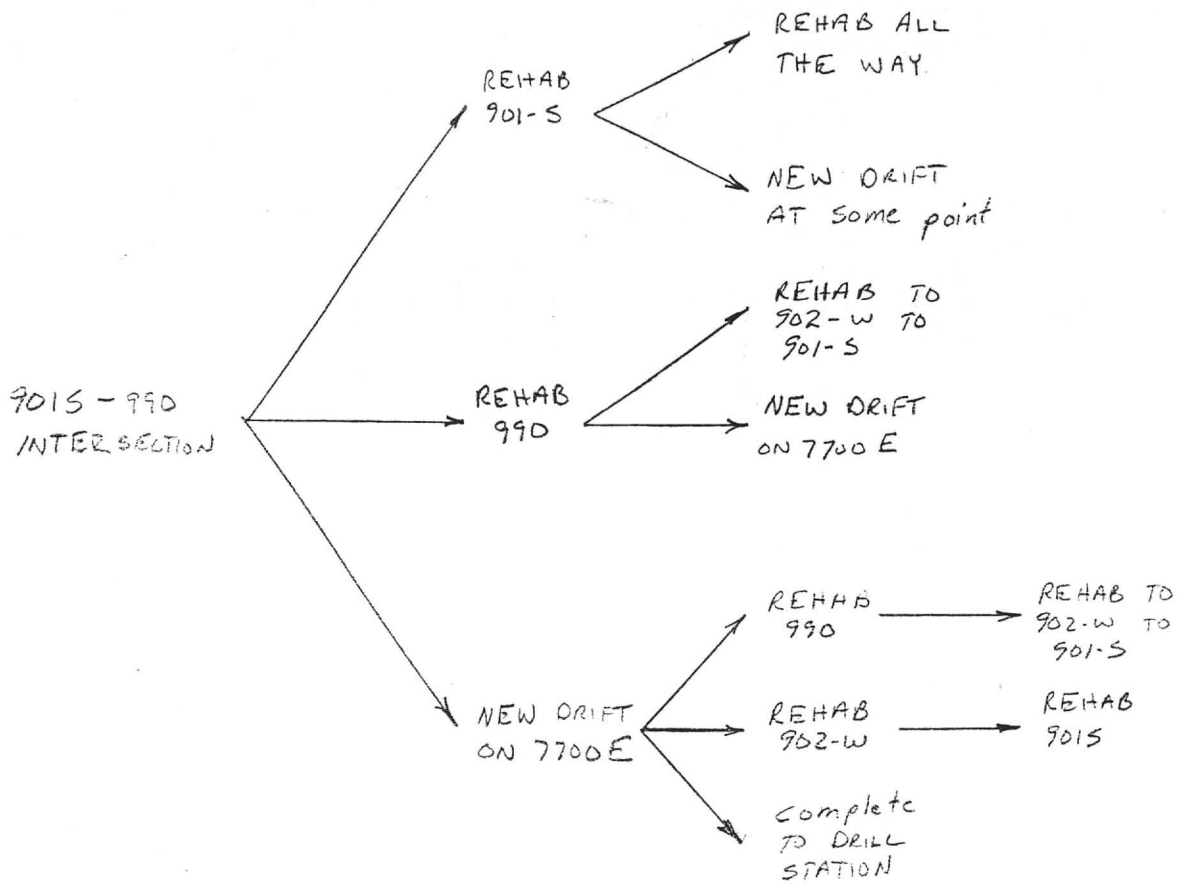
Option 2: Rehab 120 feet of 990; advance 300 feet new drift on 7700E grid line. Total cost: $96,000. Requires 8 weeks to complete.

Option 3: Advance 550 feet new drift. Total cost: $137,500. Requires 11 weeks to complete.

After we haved commenced on one of these options, other decision points will be reached as we intersect other workings. The numerous permutations beyond these three make further cost estimates meaningless.

UVX

DECISION TREE TO FLORENCIA TARGET DRIFT ACCESS



UVX

Staffing Level

Current staffing of two mining crews will only allow us to advance at a rate of about 10 feet per day in new headings and maybe 15 feet per day in rehab headings. In whatever way we divide the work, one crew per heading or both crews in both headings, this is the best expected rates. This assumes advancing to the 902 drill station and the Florencia target simultaneously. The 902 station would not be completed for approximately 3-4 weeks. At that time they could team up with the 901-S crew. This would add about 2 weeks to the time required to complete any of the Florencia target options. Also, work on other drill stations beyond the 902 would cease and no work could be done on obtaining a bulk sample from a test stope.

One Additional Mining Crew

Should we hire one additional mining crew to work the 901-S, advance to the Florencia target would be maximized. The crew working in the 902 area would then continue advancing, excavating drill stations and proceeding to intersect the 902-W drift for an eventual loop on the 950 level or test stoping in the M-3 zone.

Two Additional Mining Crews

Two new crews would double up our efforts on both fronts.

Crew Requirements Beyond the Immediate Plan

When a crew is freed from drill station work on the 950 level, work can then proceed on several objectives. First, access from the 950 by way of the 800 level. Second, stoping in the M-3 zone could be intensified. Third, the tail drift and waste storage at the 950 station/dump pocket could be completed.

A connection from the 950 level to the Audrey shaft needs to be done.

After the drill station work is complete on the 950 level, several months of drilling will then be done. Two additional crews will help us through our immediate program, but to keep those personnel working beyond that may mean pursuing work to develop a mine which is not yet proven. With one additional crew, our advance will be improved as well as our flexibility and have a lower risk of having to lay off personnel in the future.

The plan with three mining crews would then be to advance the 901-S with two crews and excavate the 902 drill station with the third. The third crew would then continue to develope drill stations or bulk sample the M-3 zone. Upon completion of a Florencia drill station, those two crews would then be split between closing the loop on the 950 and developing access to the 950 from the 800 level or stoping the M-3 zone.

Carole

M E M O

TO: Carole A. O'Brien, A.F. Budge, A.J. Fernandez

FROM: Don White

DATE: May 11, 1987

SUBJECT: Suggestions made by Herb Welhener and other thoughts related to U.V.X. mining

Herbert E. Welhener and associate, Jack Riddle, both mining engineers, met with Joe and me at the UVX on Thursday, May 7, 1987. The main purpose of their visit was familiarization with the M-3 zone, its access, geometry and dimensions, internal and wall rock characteristics, and other factors affecting its mining. They have been asked to recommend a mining plan for the M-3 zone.

A number of other issues had to be touched on in the course of discussion. In so doing, Herb made a number of recommendations of merit:

1) Rock density measurements - The M-3 zone includes low density silica grit (perhaps 16 ft^3/s.t. because of its porosity) and high density ferruginous chert (maybe only 10 ft^3/s.t.) ore types. Some quantification of this is in order. It will refine our reserve calculations and improve mine planning.

2) Rock quality determination - RQD logging should be integrated into my core logging routine as an aide to mining studies. Herb promised to send me forms and instructions to facilitate RQD logging.

3) Strength tests - Unsplit drill core from key rock types in future holes should be sent out for strength tests. Sheared samples can be returned if assays are needed upon the same material.

4) Subsidence documentation - The whole issue of mining near the Verde fault and beneath the town of Jerome was pivotal to the day's meeting. Our mining will be miniscule compared to that of immediately adjacent silica ore stopes, but we could easily be used as scapegoats for any damages at the surface. For that reason Herb's points are well taken in that we should document, both by surveys and photographs, all that we can related to subsidence. This should include underground surveys, surface surveys in the mine area and town, and photographs of the fault traces and foundation damage now in evidence. Such documentation will at least clear us of responsibility for those damages that precede our mining.

   Attached are two extracts pertinent to subsidence and surveys. The one by Joralemon refers to the 1939 legal precedent established by out-of-court settlement between the town of Jerome and the P.D./U.V.X. companies. The other by D'Arcy discusses

U.V.X. backfilling procedures, their effectiveness, and monitoring of subsidence.

5) Backfill sources - We will produce some waste as part of development efforts. Where practical, this can be utilized underground, even if it means hoisting from the 950 to 800 level, to avoid more cumbersome surface handling and shaft transfer.

The P.D.-owned tailings from the United Verde/Clarkdale mill might well be considered. Those tailings are a subject of current concern to environmentalists critical of P.D.'s land trade proposed wherein Copper Basin BLM lands would be consolidated by P.D. in exchange for, amongst other parcels, the tailings adjacent to Tuzigoot National Monument. The tails are viewed as a chemical "hazard" (same type as being ground up and acidified by Ironite at the Iron King Mine and sold as lawn and garden fertilizer) and dust source and hence may be available free of charge (or even at "negative cost" if someone dislikes the tails enough; e.g., P.D., towns of Clarkdale/Cottonwood, state of Arizona). Perhaps some sampling of the tails for grain size and chemical analyses should be initiated and, if appropriate, negotiations with P.D. started.

6) Possible leach pad available - Pete Flores, in the course of checking out rail sidings and haulage routes, noted the concrete leach pads near the Hopewell tunnel portal. They are P.D.-owned, former copper leach pads, unused since at least the early fifties. They are not too far away and in a rather remote canyon, ideally suited to a gold leaching site. If tests reveal we should plan toward our own leaching of certain ore types, we may well want to approach P.D. about this.

7) Need for down-the-hole survey instrument - As exploration drilling advances we may find increasing need for more accurately surveying our drill holes. M-10 and M-11 are examples of holes where accurate locations would help geologic and reserve interpretations.

On the 806-1 hole in January, 1986 we borrowed the Stan West Corp. single-shot camera survey instrument. That performed well. Their office could not be reached when needed during the M-10 or M-11 drilling. Rentals require considerable lead time and are expensive. We might will consider owning our own instrument for this and other projects.

DW:sk

convince prospective clients that my head was more important than my weakening legs.

World War II made the transition more complete. After it there was less frequent adventure but the occasional journeys were even more exciting than before.

Voralemon, Ira B; 1976; Adventure Beacons

Valuation and Arbitration

The new sort of work that came first was valuation of mining properties, for purchase or as a basis for taxation. Few engineers had specialized in this branch of engineering before the war. I gradually worked my way into it through valuations for companies for which I was regularly employed. Then other companies hired me for important valuations. The most important of these commissions was valuation for tax purposes of all the branches of Phelps Dodge Corp. in 1934 to 1939. This was to support requests by the company for reduction in the value on which taxes were computed. The catastrophic drop in the price of copper during the Depression made relief imperative. The determining factor that would govern the value was the price of copper that might fairly be expected in the 10 or 15 years after the date of valuation. Because of cumulative interest the price and profit more than 15 years in the future had little bearing on the value. It took several years to prepare the suits for trial in Arizona courts. During this period valuations of the various great mines were more than cut in half after negotiations with the tax commissions.

The Phelps Dodge tax suits finally came to trial in Tucson in 1937 and 1938. It was evident that the value depended on the future copper price. C.K. Leith, one of the leading educators and engineers in the country, and I estimated the 15-year average price, beginning in 1933, as 10½¢ per lb. Engineers for the State Tax Commission thought it would be 12 or 13¢. The average 1933 price was 7.02¢. Wartime preparations caused a temporary copper shortage and a 13.1¢ average price in 1937 but then government price-fixing made the price drop to an average of 11¢ from 1938 through 1945. Leith and I did not have to be ashamed of our estimate. But the decision by the Arizona judge was that the Tax Commission could not be expected to foresee in 1933 the long dry spell for copper. Therefore the 12 or 13¢ average claimed by the state was not unreasonable, so we lost the final round in the contest. But we had already gained a big

decrease in taxes that made possible a profit during the prewar years.

I was later employed by Kennecott Copper to represent their Ray and Chino branches in tax suits. Both got good reductions.

Jerome → subsidence case

An important arbitration case concerned a landslide that had wrecked a large part of the center of the city of Jerome, Ariz. United Verde Extension had mined a great ore body down the steep mountain below the area wrecked by the slide and the United Verde branch of Phelps Dodge—an independent company when the slide started—had mined millions of tons of ore and waste from the mountainside above the slide. The situation was complicated by the fact that the great Verde fault outcropped just above the caved area and unusual rainfall had been accompanied by smaller slides below the fault, far from any mining. While the owners of the buildings wrecked by the Jerome slide would have a hard time proving that the mines were entirely responsible, the directors of United Verde Extension and Phelps Dodge agreed that as Jerome depended entirely on the mines that were nearing their end, it would not be fair to let property owners be ruined by the slide. Because of a large "slump" of the surface just above the Verde Extension stopes and down the mountain from the disastrous slide it seemed obvious that Verde Extension was at least partly responsible. Therefore it was agreed that Verde Extension would reimburse the owners of the wrecked buildings, but that without any publicity the companies would employ an arbitrator to decide the division of responsibility between the companies, and the decision of the arbitrator would be final. And they agreed on me as arbitrator.

I accepted the assignment on condition that my decision need not depend exclusively on testimony of the eminent geological experts employed by both parties, but that I might also take into account geological ideas of my own. This turned out to be fortunate. I spent weeks listening to the testimony of some of the best experts on geology in the country, and in visiting the mines and studying the surface. It was a lonely job because no one outside a few employees of the companies had any idea why the great battery of technical men had been brought together. If it had become known that both companies were accepting responsibility, the demands of the property owners would have been doubled. And in the interest of fairness I could not eat or associate in any way with friends on either side, seeing them only when several representatives of both sides were present. After the hearings were over I spent more weeks in my San Francisco office, studying the evidence and making a chart that showed all the events that had ac-

companied the years of the slide. It showed rainfall day by day for years, exact measurements of ground movement at many test points all around the slide area, monthly tonnages of ore mined by Verde Extension, monthly tonnages of ore and waste mined by United Verde in its open pit, and tonnages placed on waste dumps above and below the Verde fault, and all the other data I thought might be pertinent. I don't think there was ever as much information on one sheet of paper. Oh yes, the dates of all the big blasts in the United Verde open pit were also recorded.

When it was done we all, including expert witnesses, gathered again in Jerome. I gave each party a copy of my chart. The most important thing it showed, which neither party had noticed, was that there had been motion on the Verde Fault in the slide area at the time of the slide. And I concluded that if the motion had been due to events in the United Verde open pit, the motion must have continued a mile north of the damaged area in Jerome, to a point opposite the main part of the open pit and the big waste dumps the United Verde had placed on the hanging wall of the Verde fault. The comparatively recent Hopewell haulage tunnel crossed the fault in this area. If there had been fairly widespread movement on the fault at the time of the slide, there ought to be a considerable movement apparent on the fault in the Hopewell Tunnel.

United Verde engineers said they had never noticed any offset in this area. A trip underground would quickly settle the question. I could see that both parties were skeptical, but we loaded the whole group into a couple of cars, drove to the portal of the Hopewell Tunnel, and got into the train of man cars that was waiting for us. It took only a few minutes to ride to the projected position of the fault, which was marked by shattered rock. I got off the train, stood up on an ore car until my eyes were on a level with the bottoms of the horizontal timber caps, and sighted along the caps toward the fault. I had an engineer from each party hold a light just below the successive caps. For 200 ft the light stayed in sight, in line with the caps near me. Then, as the lights moved from cap to cap, they disappeared. A few feet further in, beyond the crushed area of the fault, I had the engineers drop their lights until they were in line with the bottom of the caps near me. The evidence was conclusive that there had been a downward movement of 14 in. on the east side of the fault after the timbers had been put in. A survey made later that day showed that the rails also had been gradually raised 14 in. as they crossed the fault. The

movement of timbers and rails had been made a little at a time by repair crews, without the knowledge of the management.

The movement of the Verde fault at the time of the Jerome slide and of United Verde activity in the open pit made it evident that Phelps Dodge should pay for at least part of the damage. Less important observations had suggested this, but not as conclusively. United Verde extension responsibility due to the fact that the slide ran right down into the area of subsidence over Verde Extension stoping was greater and more evident. After the Hopewell Tunnel expedition we adjourned the hearings and I went home to write my decision. It assessed two-thirds of the losses due to the slide to United Verde Extension and one-third to Phelps Dodge.

Within a couple of days after my formal decision reached New York I received a friendly wire from Louis Cates, president of Phelps Dodge, saying that my discovery of the recent movement on the Verde fault had convinced Phelps Dodge that they were partly responsible. They thought my decision was fair, and thanked me for the care with which I had studied the case. A couple of days later I received a rather peremptory wire from Jim Douglas, president of United Verde Extension saying that the recent motion on the fault changed the whole question of responsibility, and that therefore I should reopen the entire inquiry to give their experts a chance to show that all the damage should be paid for by Phelps Dodge. Of course I said I could not do this. I was a bit irritated because without my deduction that the fault had moved Verde Extension would have had almost no case at all. I felt much better when, a couple of days later, as I was starting with my family on a vacation trip through Europe, another wire came from Jim Douglas wishing us a happy tour and saying they accepted my decision. This was characteristic of my good but sometimes demanding friend Jim Douglas.

Vacation in Ireland and Europe

We were happy to have a trip to Europe. It would mark the end of our close relation with the young, before Molly started work at Radcliffe and Peter at Phillips Andover for a year before Yale. And we had been working hard, Dorothy on constructions for the 1939 Exposition at Treasure Island, and I with the Jerome arbitration.

A fortunate offer added to the enjoyment. A wealthy Bostonian,

Don White

NOTES ON THE UNITED VERDE EXTENSION MINE — Probably by Mr. R.L. D'Arcy
~ 1939 UVX chief Mine Engineer

The United Verde Extension Ore Zone occupies an area in the hanging wall of the Verde fault about 1500 ft. along the strike of the fault by 600 ft. across. The ore is located in an area of Precambrian schists.

Ore has been mined from the 1900 level to above the 800 level in the schist areas, the bulk coming from between the 1600 and 1100 levels. Some ore has also been mined from the 700 to 300 level in a conglomerate formation in the north end of the ore zone. Producing levels

The mine has produced 4,110,000 web(?) tons of ore. The main orebody produced 2,100,000 tons, in round numbers; the 819 orebody, in the quartz area above the main orebody, produced 200,000 tons. North of the main orebody, the 1507 veins produced 350,000 tons, the 1207 country 475,000 tons. The remainder, some 475,000 ore tons come from smaller orebodies scattered thruout the mine. Production ~75% Main body 819-L 1507-Veins 1207

Mining in the main orebody began in 1916. Stopes were started in the central portion of the orebody and also near the west edge. Later stopes were started in the east end of the orebody. From then on mining consisted in whitling slices off the ore mass until it was mined out. The mining was carried in steps, so the operations of the different levels did not interfere. The result was that the 1300 level was mined slightly ahead of the 1400, the 1400 ahead of the 1500, and so on. Mining methods

The ore was mined by the ordinary square set method, with a Mitchell slice used in mining some of the pillars.

Over a period of years it was established that 90% of the square sets mined were filled; and that better than 90% of each set was filled [12 to 13 - 17 cuft. cars per set]. The fill may be assumed to compact 20%. The amount of compacted fill then is .9 x .9 x .8 = .648 or 65% of original volume. The timber left in the stopes will run from 8 to 9% by volume. Assuming 50% of the timber rots out, there remains 4% as fill. This leaves voids of 31% of the excavation. Backfilling

The fill was obtained from the usual development work consisting of drifts raises and shafts, and a surface glory hole. Considerable waste was also sorted out in the stopes, in the outside orebodies.

The excavation made thru mining is very nearly 36,000,000 cuft. or 1,333,000 cu. yds. A figure of 9 cuft. was used in estimating ore reserves. In estimating ore production a figure of 30 tons per square set of 247 cu.ft. was used. This method was used over a period of many years, and production figures checked very closely with shipments to smelter. This gives 8.25 cu. ft. per ton. Allowances for a certain amount of overbreak in mining raises this figure to 8.7 or 8.8. Volumes & density

After mining operations had been carried on for a few years a cave developed in the quartz area above the main orebody. This cave extended up thru the quartz and finally checked itself in the schist areas which it encountered from the 1100 level up. The mining of the smaller orebodies did not develope caves, except of very local character. Caving

30 tons per square set in sulfide ore

The effect of mining operations has been to cause a sag in the overlying rock formations with the greatest sag directly over the main orebody, diminishing from this point in all directions. Subsidence

In the fall of 1921 the U.V.X. began the development of two new levels, the 950 and 550. These levels were driven for prospecting purposes. Both of these levels passed over the Main Orebody area. A level record dated March, 1918 of a frog at 816/817 in this area gives the elevation as 4340.33. The next record, dated September, 1921, gives 4340.19, a difference of .14 ft. in a 3½ year period. This marks the beginning of sagging of the formations. The next record, dated January, 1924, gives the elevation as 4339.29, a difference of .90 ft. over the 2 year, 4 month period. Sometime during 1923, a dislocation of the hanging wall of the fault was noticed at the old U.V. hospital, at a point 800 ft. above the described area on the 800 level. This is the first recorded instance of movement of the hanging wall block, to our knowledge.

The hanging wall block involved in the sag has settled slowly and very evenly. On the Bitter Creek Tunnel elevation the drop on the fault is about 2.5 ft. on the footwall proper and about 1 ft. on the hanging wall slip. On the east side there has developed a more or less vertical fracture, extending from below the 1300 to above the 550 level. To the south there is no discernible break on any level. The formations here simply sagged. This is also the case on the north end, with the exception of the 950 level, where some cracks have appeared in a quartz area in that end. The area involved is roughly 800 ft. x 1100 ft. on the 950 level. On the surface it comprises the area between School Gulch to the south, Bitter Creek to the east and north and the Verde fault to the west. The greatest amount of sag on the 950 level of which we have record is 14 ft. This amount is carried up past the 800 level. On the 550 and Bitter Creek elevations the sag amounts to about 12 ft.

During the years that the movement of the hanging wall block has been in progress extensive development work and mining has been carried on in the block.

It necessitated raising track and backs of drifts from time to time. But the movement has been so even and gradual that the rock structure within the block is still virtually undisturbed in the Precambrian from the 950 level up, and but very little disturbance is shown in the conglomerate and lava above. This condition also persists on the surface along the Daisy road and in the hillside above.

Carole

M E M O

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

FROM: Don White

DATE: May 11, 1987

SUBJECT: U.V.X./D.D.H M-11 and some comments on the M-3 ore zone

My apologies to all for ending D.D.H. M-11 in good grade gold and silver mineralization. Of course I had everyone breathing down my neck wanting to know how soon the Morgan drill station would be vacated so that crews thwarted on the 901-S could tunnel past the Morgan to the 902 drill station. And the drillers themselves had had enough of four months at the Morgan station, were knee deep in mud, and asking whether they could quit after each run. But the decision was mine and on the basis of geology I decided the prematurely ferruginous zone at the end of M-11 was evidence enough to terminate the hole.

I was wrong and the M-11 experience is the most graphic example yet of a phenomenon very important to our interpretation of the mineralization. The main point is that mineralization is not completely conformable. It is modestly cross-cutting into units we generally consider more barren such as the banded chert upward and the very ferruginous chert downward (stratigraphically). This is apparent in both vertical cross sections (fences 3 and 5) of the M-3 zone.

In general the mineralization is stratabound but in detail it can transgress contacts of subunits within the chert. This suggests remobilization of the gold, such as by the diorite. In fact, the plutonic contacts may be more parallel to the semi-conformable mineralization than is the chert stratigraphy. It makes Bob Hodder's recommendation of focussing on structural complexities in the margin of the diorite all the more meaningful.

D.D.H. M-10 may bear this out. We quit M-10 well beyond where it was expected to intercept chert. It was still in silicic altered diorite. Our assumption, for lack of a down-hole survey instrument, was that the hole had deflected parallel to strike. This was plausable, even expected, at the acute angle to stratigraphy we were attempting. We have only acid-etch (inclination) survey capability which was of virtually no use for lateral deflection. M-11, however, revealed a prominent thinning of the silica grit unit, mainly at the expense of the bottom of that unit. And the normal underlying chert breccia was absent. Instead, beneath the grit we went directly into cherty ironstone, typically barren or no more than subeconomic grade, but in this case up to 0.5 oz/t Au and 10. oz/t Ag.

It now appears that M-10 may not have deflected much at all. We may have revealed a local undulation in the diorite-chert contact which accounts for the rapid chert facies and gold grade changes

between M-3, M-11, and M-10. Furthermore, it may explain the overall diminishing of grades northwesterly from M-3 through M-9, and M-8. Only drilling yet further along strike to the southeast, as proposed from the 902 D.D.S., will provide the requisite evidence to figure this out.

A major outcome of our delineation of the M-3 ore zone is the realization that we have not one ore type, but several. The flux-quality auriferous chert is there, both as fine-grained "silica grit" and as the more cemented, coarser, "chert breccia." So too is a very hematitic gold-silver ore. The latter is so ferrugionous I have doubts about its suitability as smelter flux, despite dilution with very low-iron chert. Iron analyses are now being run. The possibility of having the ferruginous ore type smelted along with the rest should be investigated vigorously as mining plans are contingent upon the possible need to keep the ore types segregated. Of course the type of ore handling equipment/plant at the surface is totally dependent upon ore types and markets.

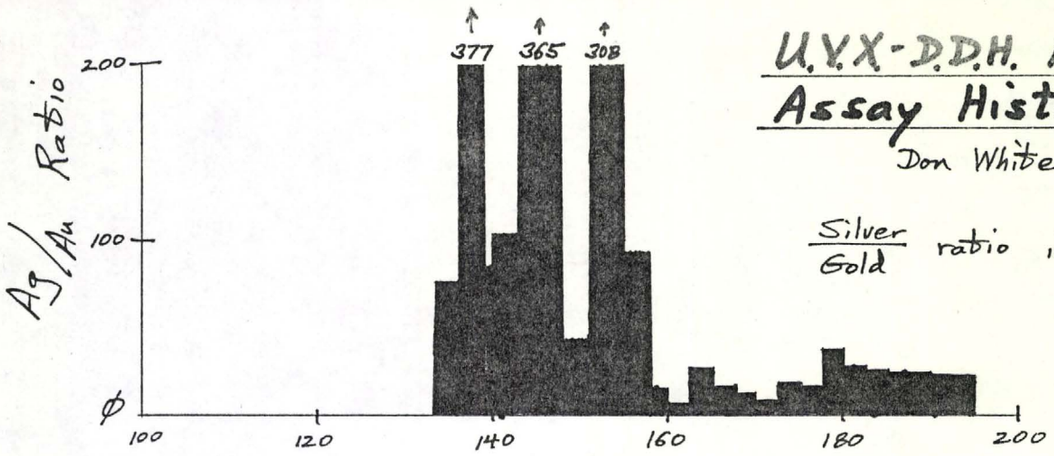
Should classification of ore types at the surface become necessary, following comingled or only partially segregated mining of the flux versus non-flux ores, a number of factors may be used to our advantage. The physical differences between low-iron-flux ore and high-iron-non-flux ore include color (light or yellow versus dark or red-brown, respectively) density, magnetic susceptibility, and breaking/crushing characteristics. Classification utilizing any two of these parameters in combination would probably yield a pretty thorough sorting.

DW:sk

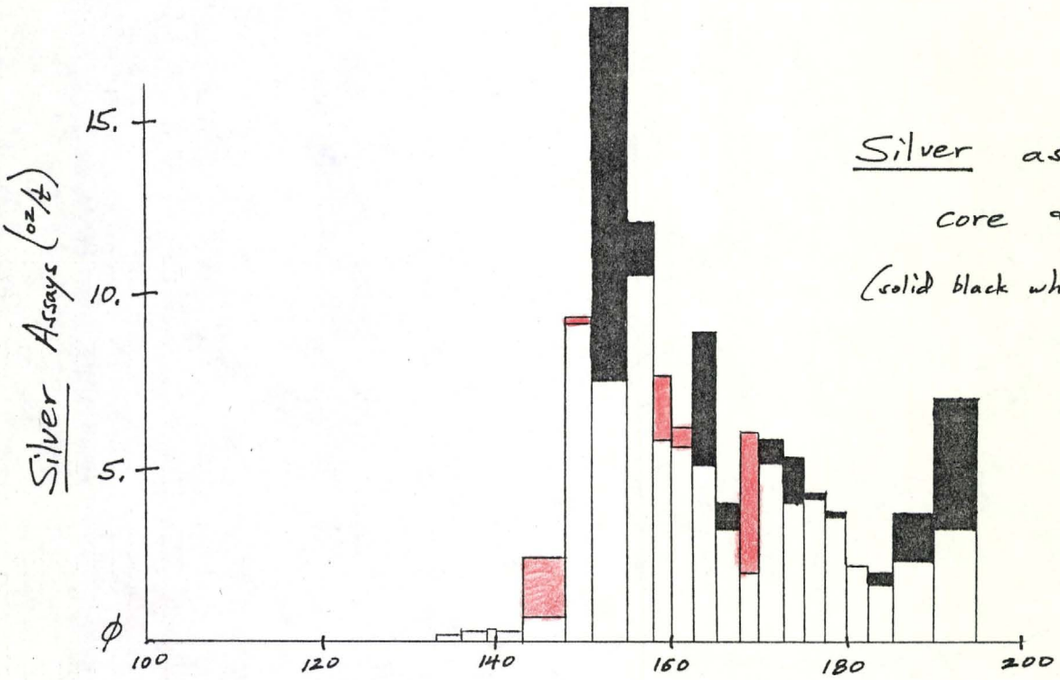
Carde

U.Y.X-D.D.H. M-6
Assay Histograms

Don White - April, 1987

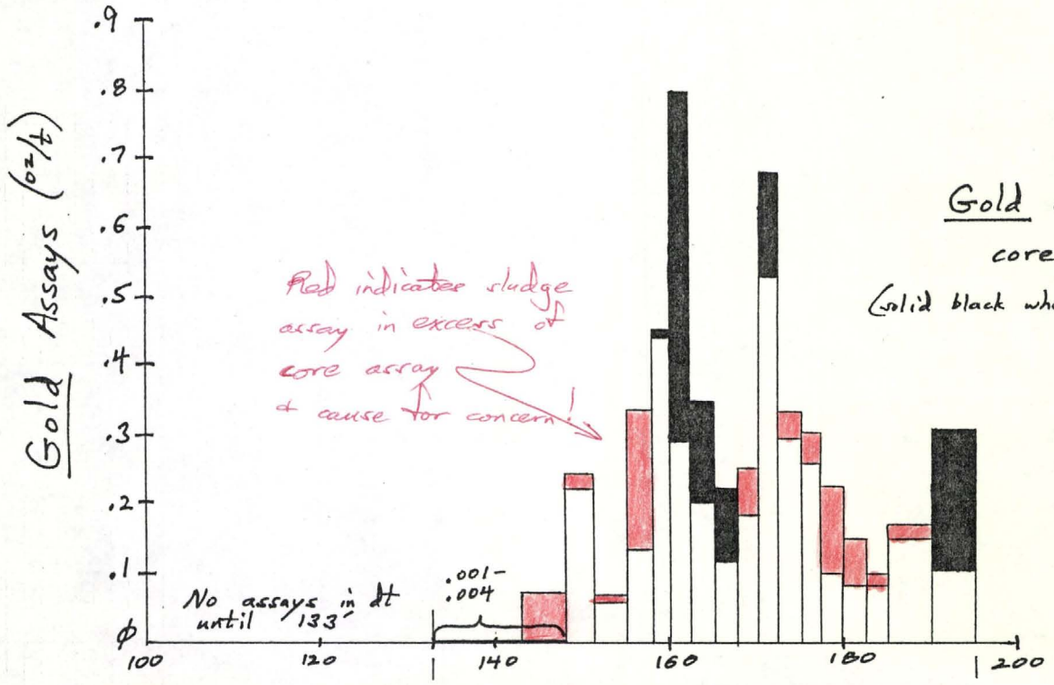


Silver/Gold ratio in M-6 core



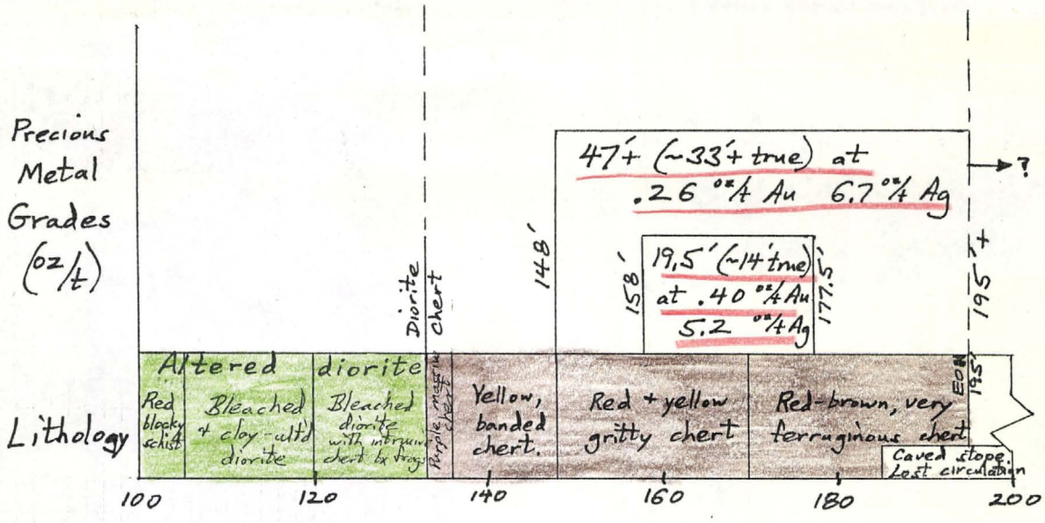
Silver assays in M-6 core + sludge

(solid black where core exceeds sludge)



Gold assays in M-6 core and sludge

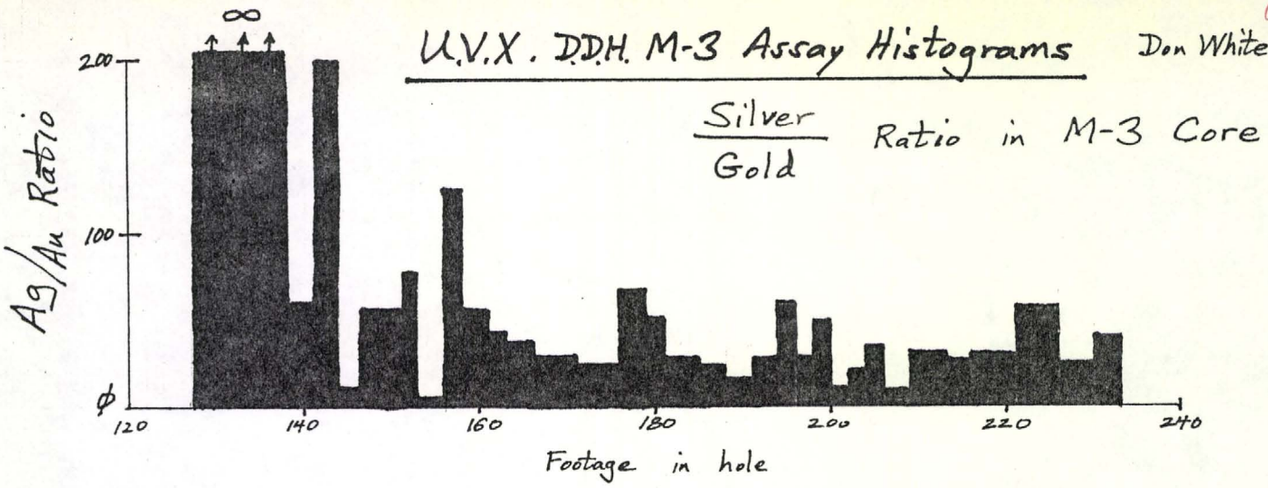
(solid black where core exceeds sludge)

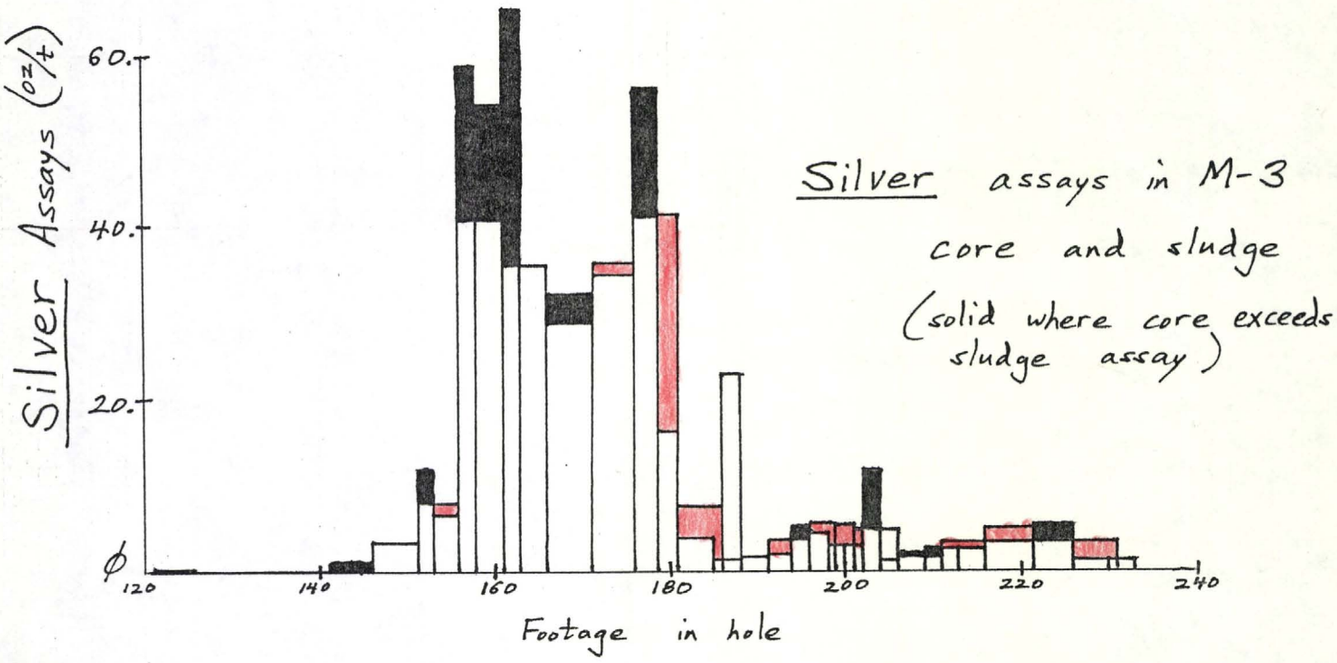


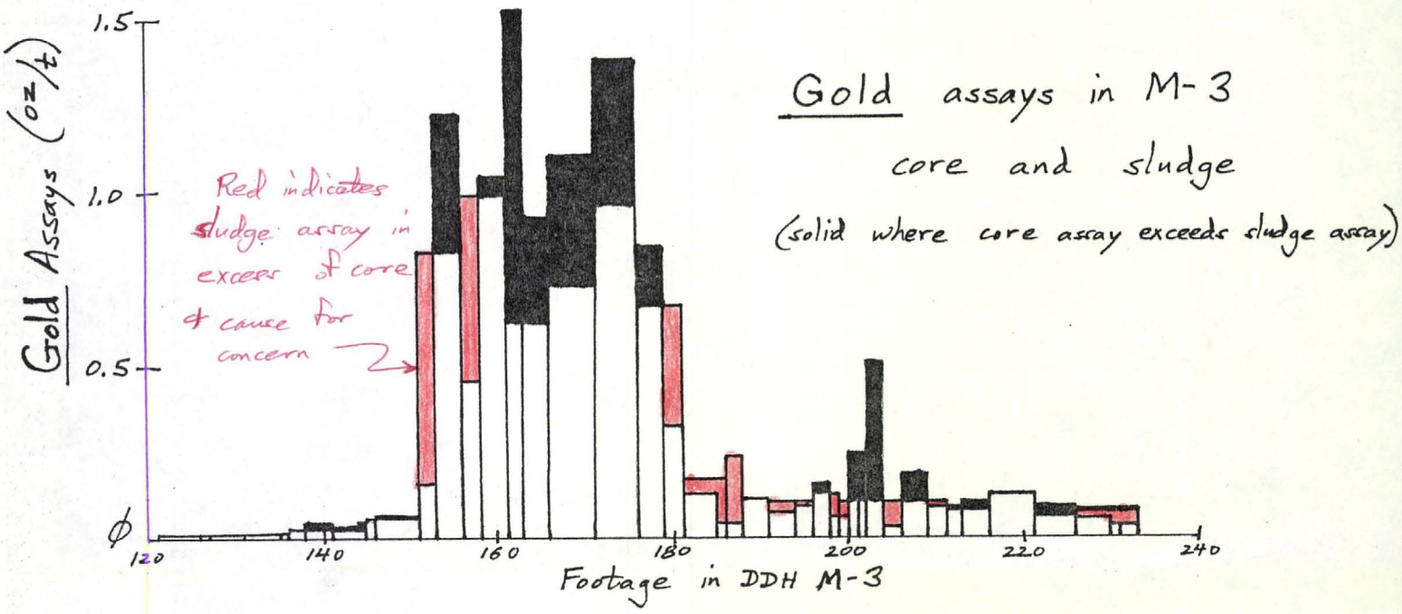
M-6 intercepts and geology

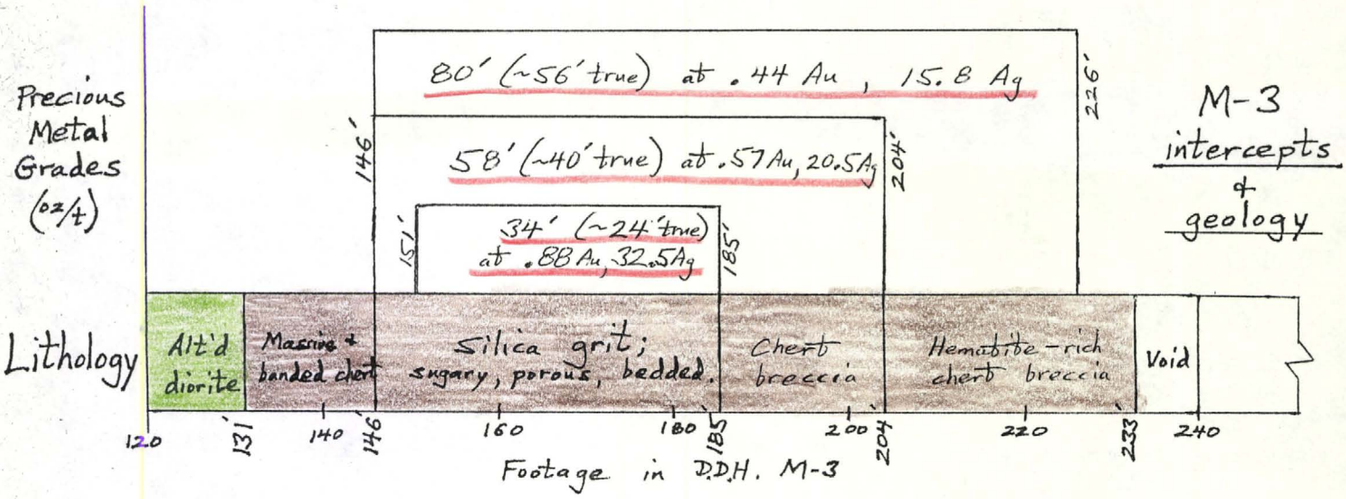
U.V.X. D.D.H. M-3 Assay Histograms

Don White March '87



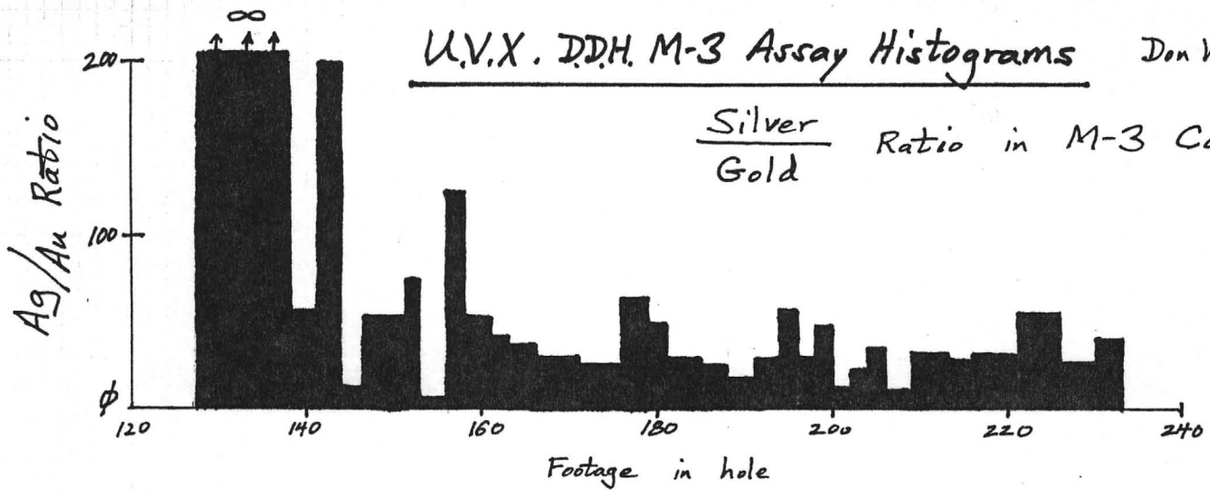


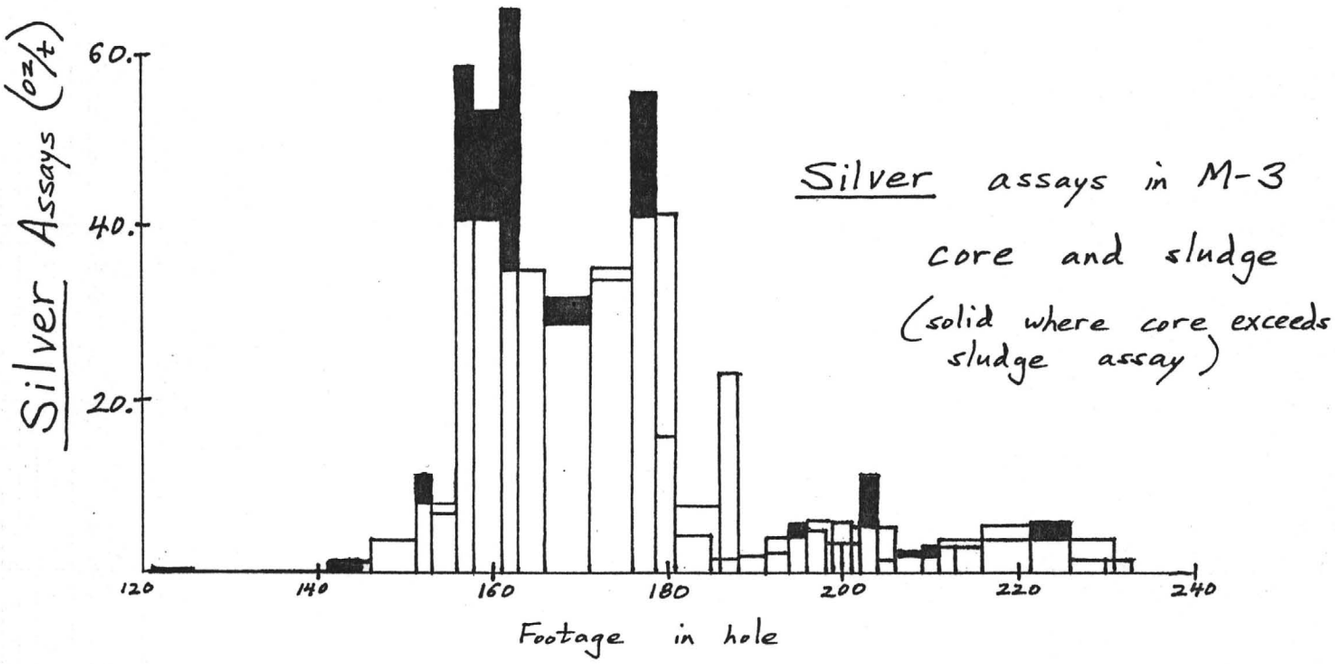


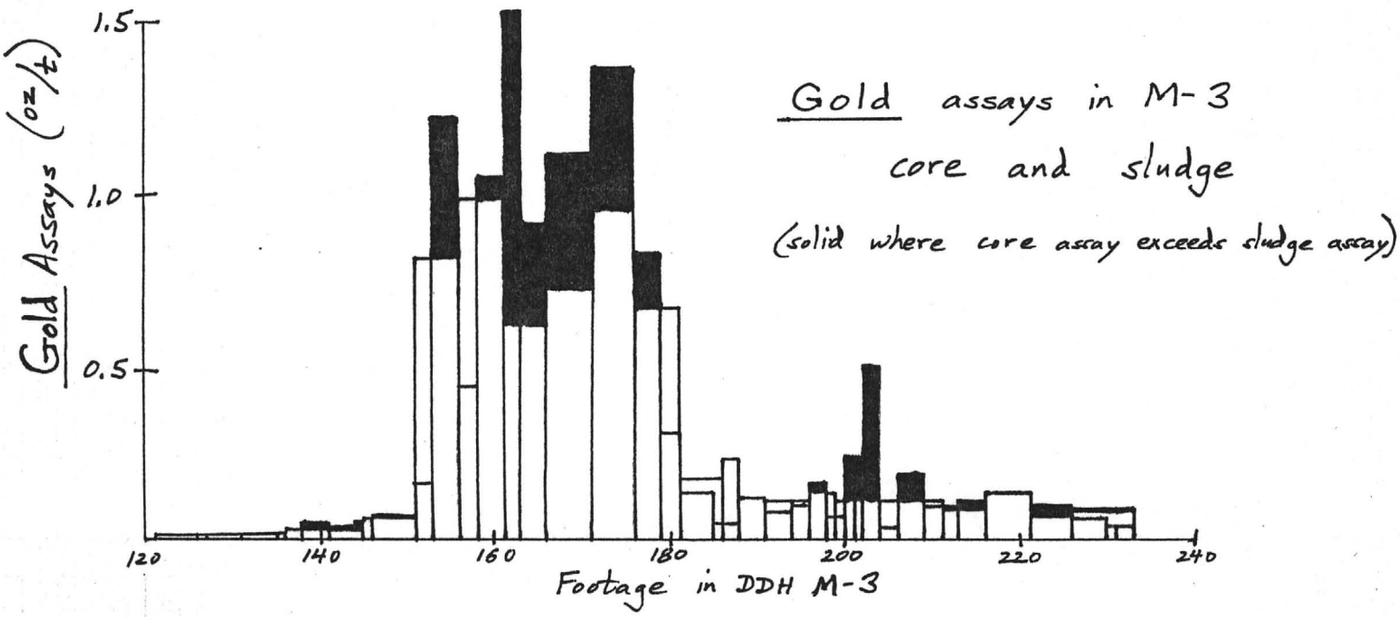


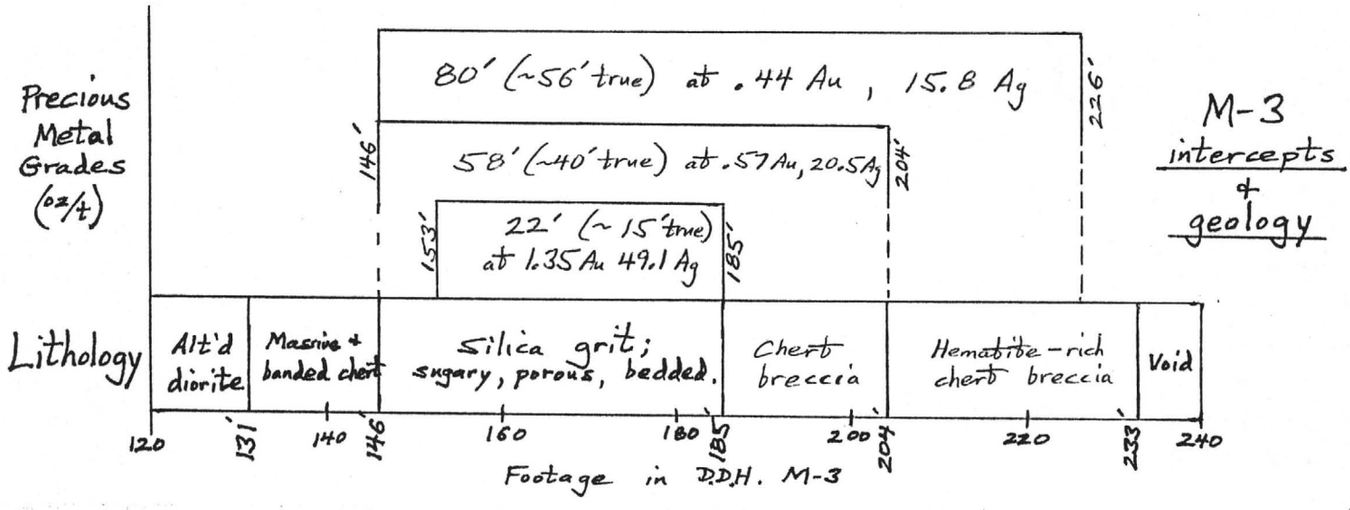
U.V.X. D.D.H. M-3 Assay Histograms

Don White March '87





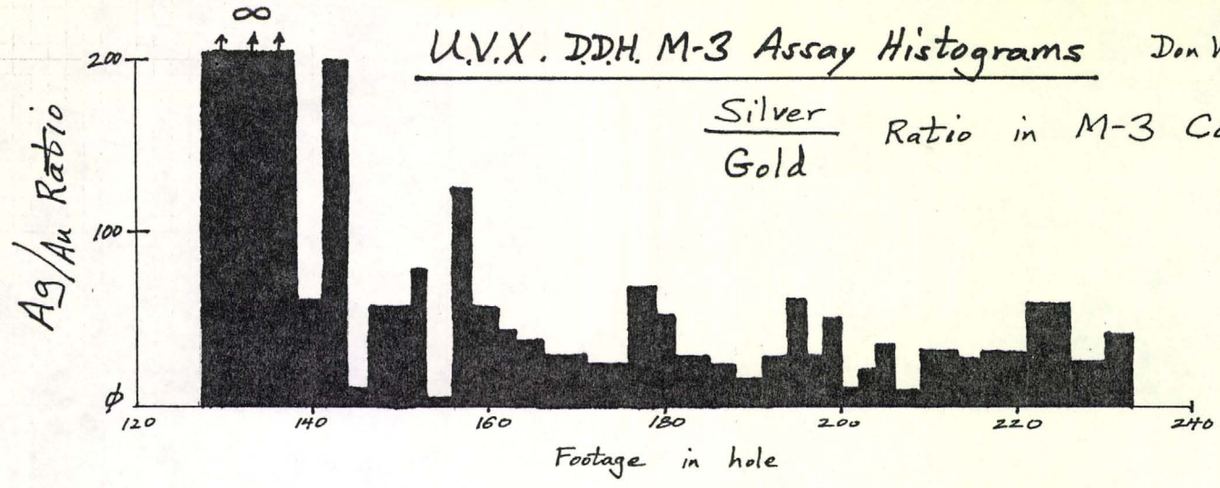


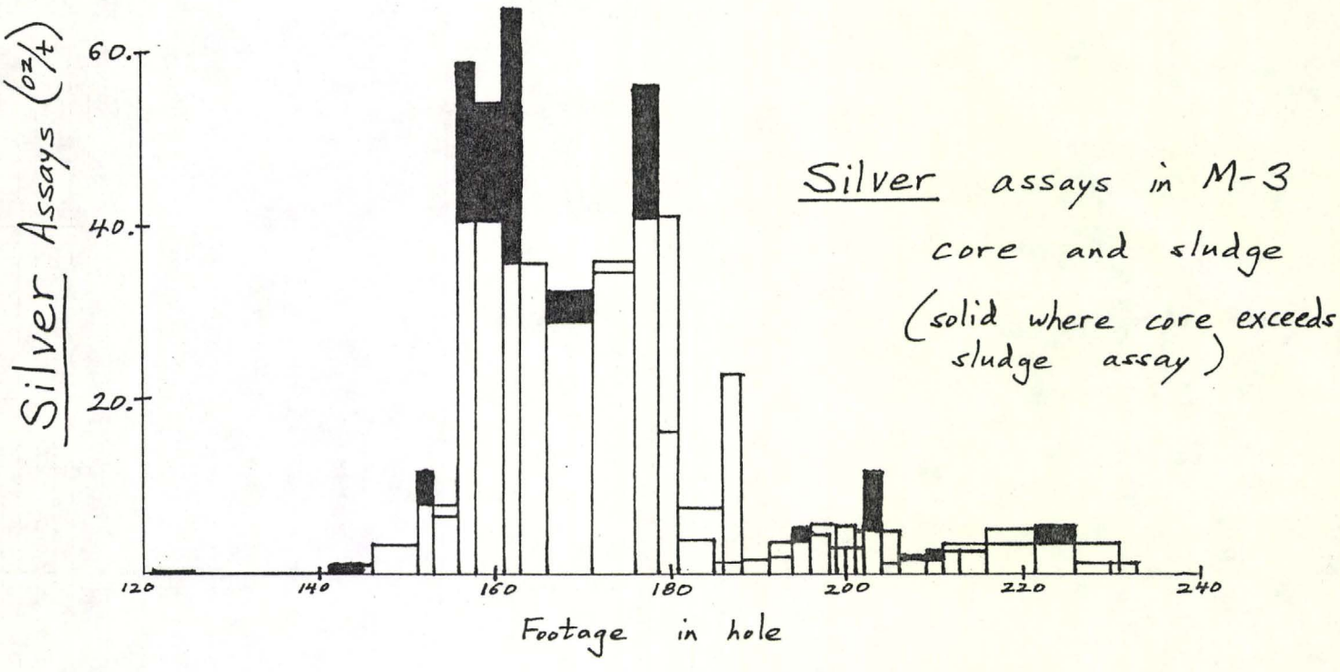


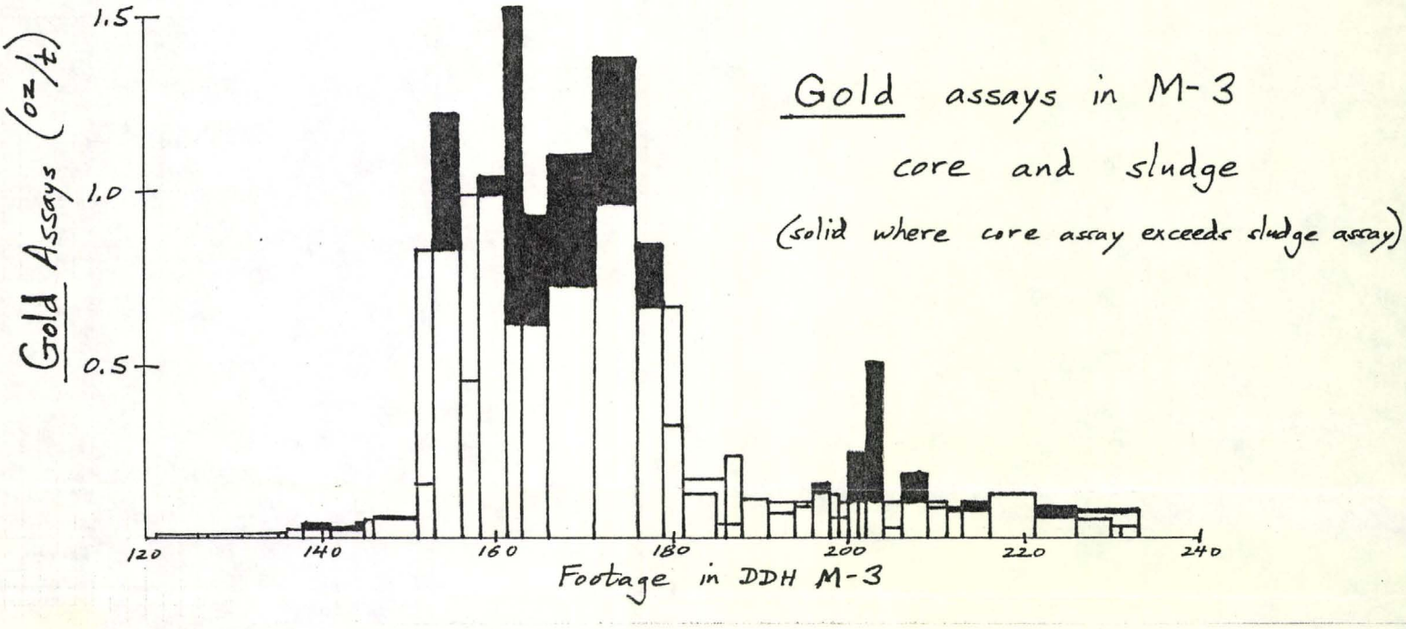
CAOB

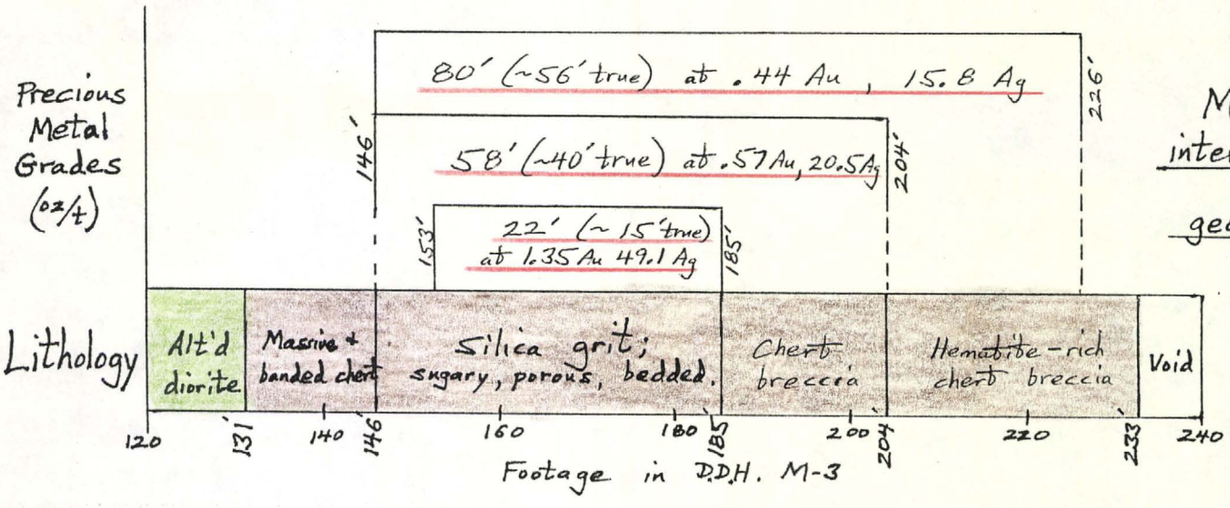
U.V.X. D.D.H. M-3 Assay Histograms

Don White March '87









IRON KING ASSAY INC.

06-May-87

LAB JOB #: MSC01514

ATTN: Carole A. O'Brien

Client name: A. F. Budge (Mining) Ltd.

No. Samples: 3

Date Received: 04-28-87

Billing address: 7340 E. Shoeman Lane
Suite #111-B-E
Scottsdale, AZ 85251

Submitted by: Don White

Phone number: 945-4630 / 778-3140

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID MSC01514	Lab ID	FA/AA Au oz/ton	AA Ag oz/ton
UVX BATCH 44			
"901-W"			
N. Rib 0-5'	1514- 1	0.110	3.45 *
N. Rib 5-10'	1514- 2	0.117	3.28 *
S. Rib 0-10'	1514- 3	0.172	1.35 *

*Results for these samples were acheived by straight Fire Assay

REGISTERED ASSAYER
CERTIFICATE NO.
15583
JIM IRON
WHITHERBY
ARIZONA, U.S.A.

P.O. Box 56 • Humboldt, Arizona 86329 • Phone (602) 632-7410

IRON KING ASSAY INC.

26-May-87

LAB JOB #: AFB01576

ATTN: Carole A. O'Brien

Client name: A. F. Budge (Mining) Ltd.

No. Samples: 13
Date Received: 05-20-87
Submitted by: Don White

Billing address: 7340 E. Shoeman Lane
Suite #111-B-E
Scottsdale, AZ 85251

Phone number: 945-4630 / 778-3140

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID AFB01576	Lab ID	FA/AA Au oz/ton	Fire Assay Ag oz/ton
UVX BATCH #50			
HOLE #809-1 / Core Samples			
237-240'	1576- 1	0.040	1.55
240-245'	1576- 2	0.007	1.31
245-249'	1576- 3	0.006	0.26
304-309'	1576- 4	<.001	<.01
309-312'	1576- 5	<.001	0.19
312-315'	1576- 6	0.013	0.76
315-318'	1576- 7	0.039	2.21
318-321'	1576- 8	0.042	2.72
321-324'	1576- 9	0.042	3.33
324-327'	1576- 10	0.078	2.98
327-330'	1576- 11	0.070	1.26
330-333'	1576- 12	0.083	2.88
333-336'	1576- 13	0.060	3.17

REGISTERED ASSAYER
CERTIFICATE NO. 14315
ROBERT G. CROOK
Date Signed 5-26-87
ARIZONA, U.S.A.

IRON KING ASSAY INC.

26-May-87

LAB JOB #: AFB01572

ATTN: Carole A. O'Brien

Client name: A. F. Budge (Mining) Ltd.

No. Samples: 1

Date Received: 05-19-87

Billing address: 7340 E. Shoeman Lane
Suite #111-B-E
Scottsdale, AZ 85251

Submitted by: Don White

Phone number: 945-4630 / 778-3140

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID	Lab ID	FA/AA Au oz/ton	Fire Assay Ag oz/ton
AFB01572			
UVX BATCH #49			
GS - E. Rib	1572- 1	0.165	3.04 *

* Results for this sample were acheived by straight Fire Assay

REGISTERED ASSAYER
CERTIFICATE No. 14316
ROBERT G. CROOK
Date Signed 5-26-87
ARIZONA, U.S.A.

Robert G. Crook

P.O. Box 56 • Humboldt, Arizona 86329 • Phone (602) 632-7410

June 1, 1987

To: Anthony F. Budge

From: Carole A. O'Brien

We have assays through 170 ft. on 809-2; nothing significant. More coming on Wednesday. Hole 809-3 at about 60 ft. Drift is progressing at about 5 ft. per shift. Second crew working on raise in ore pocket.

Joe will be going up tomorrow to check on skip/cage fabrication.

Mr. I. Parrish will meet with Don early Wednesday to review project, then come by office Wednesday afternoon to meet with me.

I have some information on your house mortgage from John Howard. Do you want it sent to England?

Send.

Following is 4 page monthly report from P. Hahn.

Citibank.

Memo also follows for M. Yates

Check @ house.

Total pages: 6

44-01-499-6363

Rm. 451

TO: CAROLE O'BRIEN

FROM: TONY BUDGE June 5, 1987

Carole,

I have considered the resumes and the maximum number of candidates I would possibly want to meet is 5:

Green and Copeland - both of whom are unemployed!
Hedlund - I do not understand why he would want to move so potentially downmarket.
Howell - Probably inadequate experience.
Holmes - Probably only to learn something regarding Norquest.

As for the other candidates, will you please write and thank them for their applications but state that we had a good response and they were not successful in being selected for interview (or similar).

Regarding Mr. Parrish, I strongly support the final sentence - how are we going to best achieve the desired objectives?

Who should or can produce such a plan and how long would it take?

What are the plans for the drilling after 809-4. Do the results to date (plus the inclusion of 809-3) justify any further drilling from this station or is this the best time to terminate longyear?

I noted from the April 8th "Mining Record" that Fischer-Watt are to operate the Dexter Project in Nevada containing 2,000,000 tons of .04 (80,000 oz) at an unspecified ratio.

They are to pay up to a maximum amount of $2,500,000 for the privilege - this appears to make our sale price on Cimarron competitive.

Tony

CAO'B

MEMORANDUM

TO: Carole A. O'Brien, A.F. Budge

FROM: R.W. Hodder and D.C. White

DATE: March 3, 1987

SUBJECT: Review of drill holes M-1, M-2, and M-3 in the Verde area, UVX project. A follow-up to our memo of November 5, 1986.

INTRODUCTION: This memo consolidates observations and interpretations of drill holes M-1, M-2, and M-3 drilled from the Morgan drill site on the 950 level into the Verde area (fig. 1) and compares results to hole 806-1 which was drilled into the same area from the 800 level. Comparison is also made between the Verde area and the 1205/GoldStope area. And results to date are tabulated against projections from the initial compilations (table 1, 2). Recommendations follow the observations and interpretations.

OBSERVATIONS:

1) Assay intervals for holes M-1, M-2, and M-3, drilled +42°, +60°, and +20° from the Morgan drill station at 11,565N and 7060E on the 950 level are as follows:

   M-1, 54 ft. averaging 0.16 oz Au/t and 1.1 oz Ag/t which includes 16 ft averaging 0.26 oz Au/t and 1.5 oz Ag/t plus 18 ft. averaging 0.24 oz Au/t and 1.6 oz Ag/t.

   M-2, 32 ft. averaging 0.10 oz Au/t and 1.4 oz Ag/t which includes 12 ft. averaging 0.16 oz Au/t and 1.5 oz Ag/t.

   M-3, 80 ft. averaging 0.44 oz Au/t and 15.8 oz Ag/t which includes 58 ft. averaging 0.57 oz Au/t and 20.5 oz Ag/t. The latter interval of 58 ft. includes 22 ft. averaging 1.35 oz Au/t and 49.1 oz Ag/t.

   These results compare favorably to those from drill hole 806-1 and data from the original compilation of old maps (tables 1, 2). They confirm the presence of significant grade and thickness.

2) Core from drill holes 806-1, M-1, M-2, and M-3 allows a) direct observation of the contact between the diorite body and the gold-bearing chert of the Verde area. b) a comparison of that contact to a similar one between this diorite body and chert of the Gold stope area.

   In brief, this is a section from the interior of the diorite body to its more altered margins and its possible involvement

in locally concentrating gold within the adjacent brecciated chert. There are three recognizable divisions within the diorite from the interior of the body outward to its contact with chert. They are as follows: (Plate 1)

i) Massive diorite. This rock is dark green in color, relatively unfractured and unfoliated, medium grained and sub-ophitic in texture and with primary plagioclase and mafic minerals recognizable but pseudomoryphed by fine grained pale green chlorite, epidote and calcite. This division grades through 10 feet of increasingly lighter green color, increasing equigranularity, and the appearance of calcite veinlets into division;

ii) Massive diorite with white planer calcite veins. This rock is fine grained equigranular. Plagioclase sites are difficult to discern as are original mafic minerals, both of which are masses of pale green chlorite, epidote, and calcite. There is also fine grained interstitial calcite, spots of black chlorite, and pink to brown skeletal grains which are tentatively identified as garnets. Planer calcite veinlets averaging 1/4 inch thick and occurring at least once in every 2 feet of core occupy joints which dip gently southeast. Calcite is in some instances accompanied by siderite and hematite. The more hematitic veinlets may grade into or be accompanied by native copper. Chlorite in veinlets is not common. This division is generally 30 feet thick and grades over 5 feet or less into division;

iii) Stockworks of hematite veinlets in beige to pink diorite. This rock is fine grained and relatively equigranular. Individual mineral grains are difficult to discern except for quartz grains which increase in frequency toward the contact with chert. Clay minerals predominate and chlorite is minor. Stockwork veinlets of hematite and specular hematite are 1/8" wide on average, several per foot of core and a bright contrast to the beige to pink background of the rock. There is a prominent foliation developed by alignment of platey minerals. Division (iii) is generally 20 feet thick and in sharp contrast with chert. Chert fragments are included within this diorite near the contact. This is taken to be an intrusive breccia.

Division (iii) of the diorite is described on the older maps and this project's compilation maps as schist (Sch) and as "blocky red schist." We now interpret this rock as the altered margin of the diorite and an envelope around that diorite separating it from chert. (fig. 2,3)

The sequence from massive diorite to stockwork veinlet beige diorite is now seen essentially as progressive hydrothermal alteration of diorite from propyllitic through argillic to an inception of phyllic assemblages nearest to the chert.

3) Reinterpretation of schist as the altered edge of the diorite makes an envelope of diorite about chert of the Verde area. (fig. 2,3). This is a setting comparable to that of the 1205/Gold Stope area, a comparison that is heightened by proximity to siliceous ore and fold-like irregularities in the chert-diorite contact. The tentative interpretation is that heat and fluids attendant to intrusion and synchronous alteration of the diorite focused at marginal in-folds produced a concentration of gold within brecciated chert peripheral to siliceous copper ore. Regardless of the interpretation, similarity of rock type and geometry between the Verde area and the 1205/Gold Stope area and coincident significant gold-bearing intersections, speaks well for the potential of the Verde area.

4) Gold has not been seen by the unaided eye in the Verde area but assays define 3 types of gold concentrations.

   i) Brecciated chert, up to 50% mustard yellow limonite matrix supporting varied sized clasts of chert and jasper. This type occurs in M-1, M-2, and M-3 and has been noted in 806-1 as well as drill holes in the 1205/Gold Stope and Florencia areas. Typically up to .25 oz/t Au.

   ii) Dense hematitic iron stone with 5% chert clasts. This is in hole M-2 and near the end of hole M-3. Typically 0.1 oz/t Au

   iii) White fine grained equigranular quartz grains which aggregate into a sandy, gritty rock which readily crumbles. There are very fine grained metallic minerals visible with magnification. This type of auriferous rock occurs in hole M-3 with grade about 1.0 oz/t Au. We speculate that it may be comparable to material mined from the Gold Stope.

RECOMMENDATIONS:

1) Holes M-4 and M-5 and M-6 should be completed from the Morgan drill station as planned (fg. 4) and pushed to the fullest traverse of the chert as possible. This will take approximately 3 weeks and correspond with completion of clearing the drift to the 809 drill station.

2) A hole should be drilled at +25° from the 809 drill station

from diorite to diorite (fig. 5) to test the up-dip extension of the Verde area.

3) Prior to, or coincident with, completion of this drilling, a mining engineer should begin an initial feasibility study with help from DCW as to best estimate of size, shape, and grade and work required to establish reserves. This would be an economic measure of exploration results and an extension of CAO'B's memo of February 20, 1987 noting that a first target is a contiguous 50,000 tons containing at least 10,000 oz.

4) All the level plans and sections should be up-dated to the end of the proposed drilling to include all gold-bearing intersections, additional data acquired since initial compilation on rock distribution, structure, ore types, and mine workings. This assembled information will be essential to feasibility studies and it will bring out a full appreciation of potential and problems. It is a time consuming necessity which is best begun now by DCW.

5) Definition of the importance of alteration and structure should continue through petrographic description of the margins of the diorite and the chert breccias. This will continue to be a help to exploration in definition of gold-bearing areas and ultimately to any metallurgical evaluation. RWH can have this done at cost.

The plotting of gold to silver ratios for assays received should continue and be formalized in a brief memo. This will help in further definition of metal distribution and the continuing question of how much of this distribution is primary and how much is secondary.

RWH,DCW:sk

Enclosures

U.V.X. VERDE TARGET AREA DRILLHOLE SUMMARY

D.D.H.	Collar location (UVX grid) N	E	Elev.	Orientation at collar Bearing	Inclination	E.O.H. Inclination	Length of hole	Chert Intercepts	Avg. core recovery in chert(%)	Remarks
806-1	11,890	7,335	4,335	S33.5 W	-4°	-12°	633	84-108 481-615	100 80(1)	Drilled Jan, 1986
M-1				S60°W	+42°	+45°	262	70-247	90(2)	Intercept ~100' NW of 806-1
M-2					+60°	+60°	226	76-85 109-205	80 90	Up-dip from M-1
M-3	11,565	7,060	4,177'		+20°	Not Surveyed	233	131-233+	50(3)	Aborted at void 233-240 when rods parted.
M-4				S2°E	+50°	In progress, as of this compilation				Up-dip from M-3
M-5					+10°	Next hole planned				Down-dip from M-3

(1) 80% in auriferous zone, 514' - 578'; 60% in chert overall

(2) 90% in auriferous zone, 122' - 175'; 85% in chert overall

(3) 50% in critical "silica grit" zone, 146' - 185'; 70% in chert overall

Table 1

Compiled by Don White
March 9, 1987

U.V.X. VERDE TARGET AREA DRILLING/ASSAY SUMMARY

	High grade intercept			Low grade intercept				
	Grade (oz/t)			Grade (oz/t)				
D.D.H.	Feet	Au	Ag	Feet	Au	Ag	Remarks	
806-1	13 10	.24 .18	2.2 0.9	64	.11	1.4	Drilled Jan. 1986 from 806 X-Cut	
M-1	16 15	.24 .26	1.5 1.6	54	.16	1.1	+42° incl.; int. ~ 100' NNW of 806-1	Fence 5 from Morgan D.D.S
M-2	12	.16	1.5	32	.10	1.4	+60° incl.; int. up-dip in and adjacent to Fe-facies	
M-3	58 (~ 40 true)	.57	20.5	80 (~ 56 true)	.44	15.8	+20° incl.; extensive silica grit zone hosting major mineralization	Fence 3 from Morgan D.D.S.
M-4	In for assay now; hole still drilling						+50° incl.; up-dip	
M-5	Next hole planned						+10° incl.; down-dip from M-3	

Table 2

Compiled by Don White
March 9, 1987

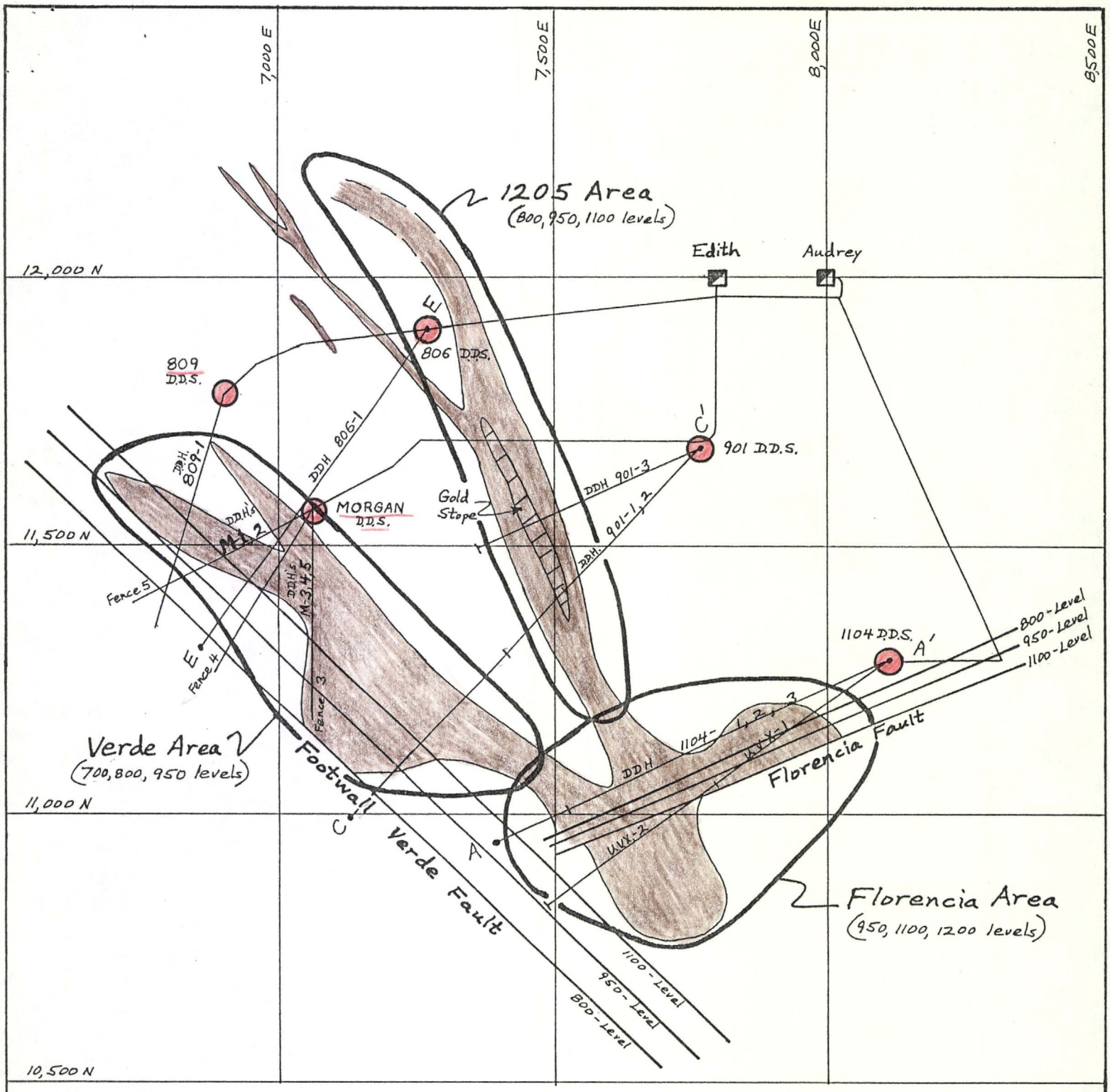
Plate 1

U.V.X. Skeleton Core,
exhibiting three divisions of diorite alteration

Division i = Massive diorite (least altered core of pluton)

Division ii = Diorite with planar calcite veins (± siderite, quartz, hematite, + disseminated carbonates)

Division iii = Heavily altered diorite with stockwork hematite veinlets + typical biege to pink alt'n color.



U.V.X. GOLD PROJECT

Sketch map showing:

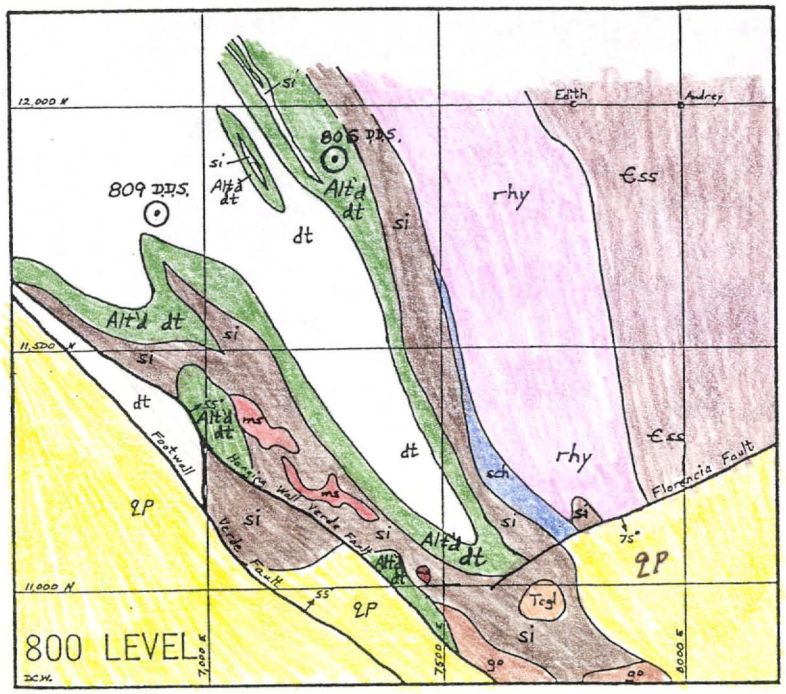
chert bodies/target areas, key cross sections, diamond drill stations.

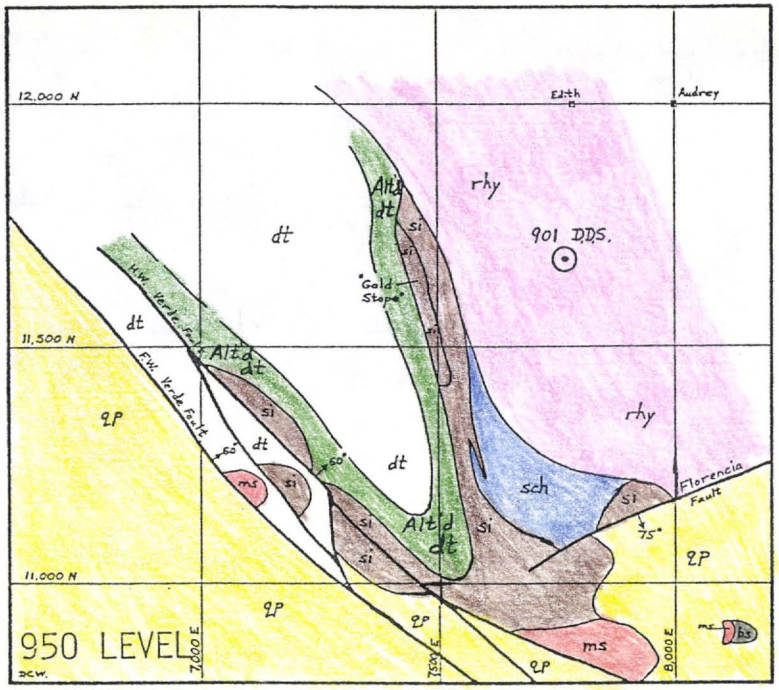
N

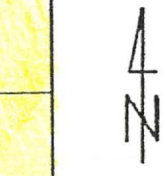
1" = 250'

Figure 1

D.C. White & R.W. Hodder - March 1987

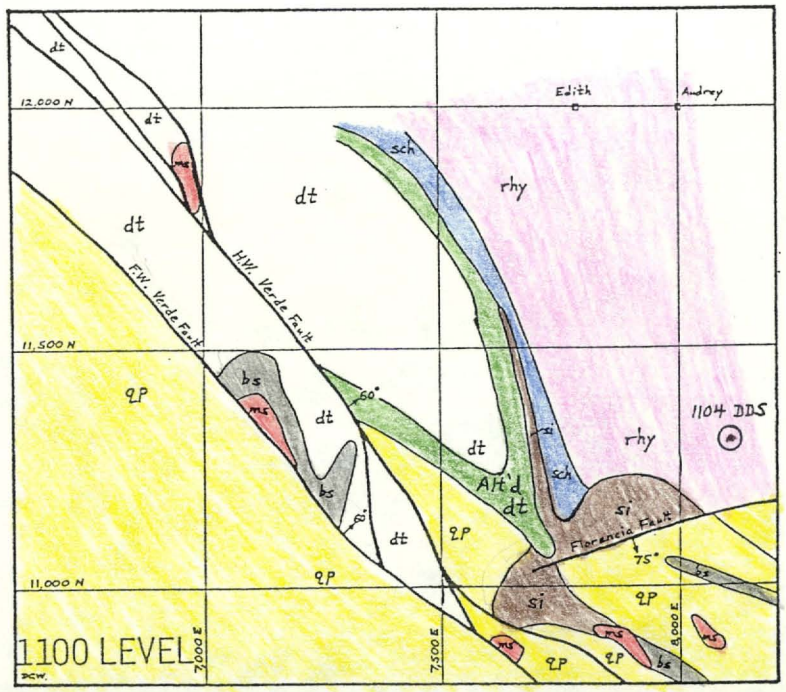






FEET

0 100 200 300 400 500



UNITED VERDE EXTENSION MINE
LEVEL PLAN GEOLOGY

Tertiary	cgl	Conglomerate (Hickey Fm.)
Devonian	ls	Limestone (Martin Fm.)
Cambrian	ss	Sandstone (Tapeats Fm.)
Proterozoic	rhy	Rhyolitic and intermediate flows and pyroclastics
	sch	Schistose volcanics (Grapevine Gulch Fm.)
	si	Silica; massive, banded, and brecciated chert and silicified volcanics
	go	Gossan after ms
	ms	"Massive sulfide" *(actually "silica ore")*
	bs	Black (chloritized) schist
	qp	Quartz porphyry (incl. Cleopatra Fm.)
	dt	"Diorite"; may be subvolcanic dome or possibly an extrusive andesitic flow

FIGURE 2

Updated to March, 1987

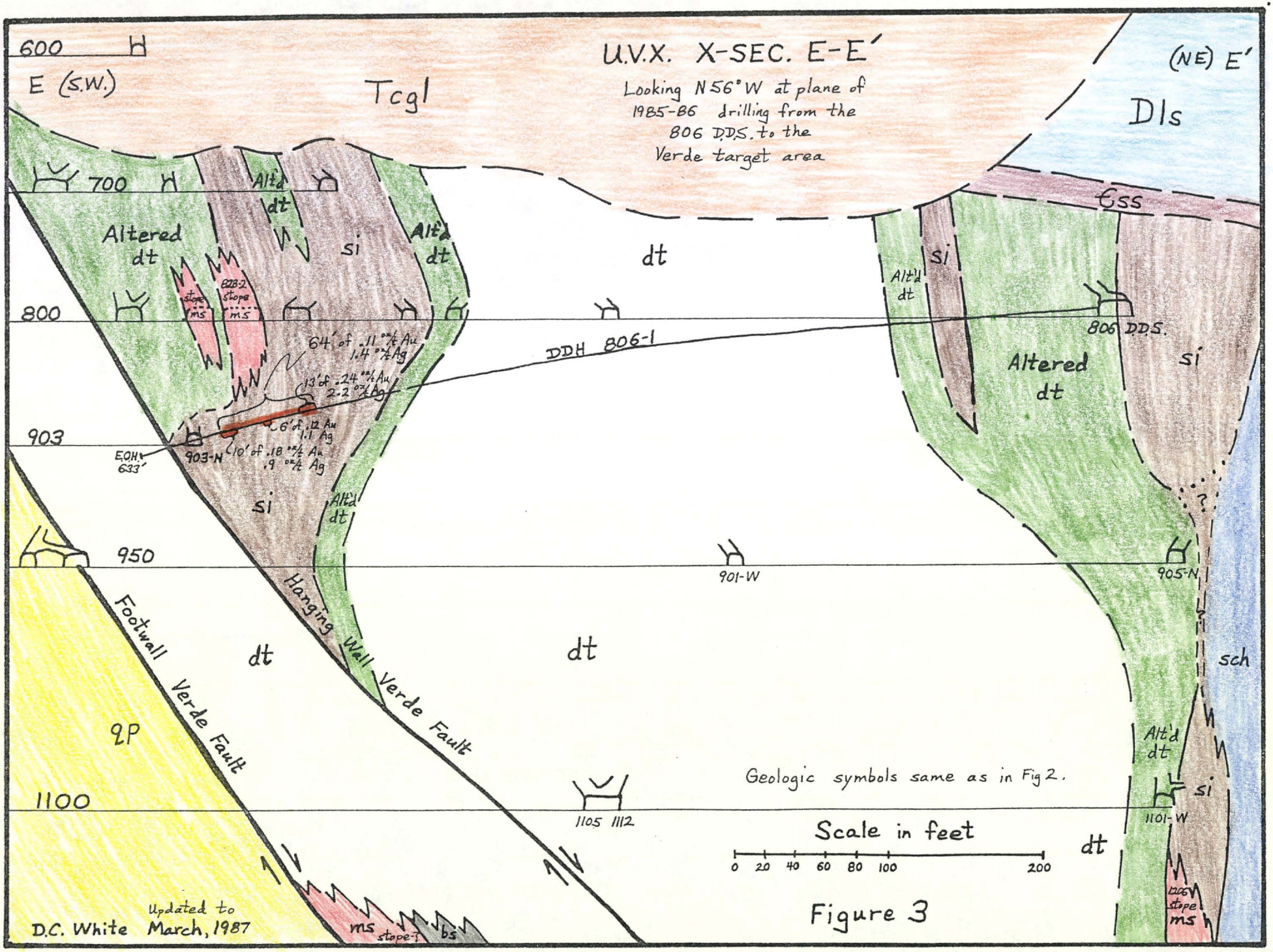
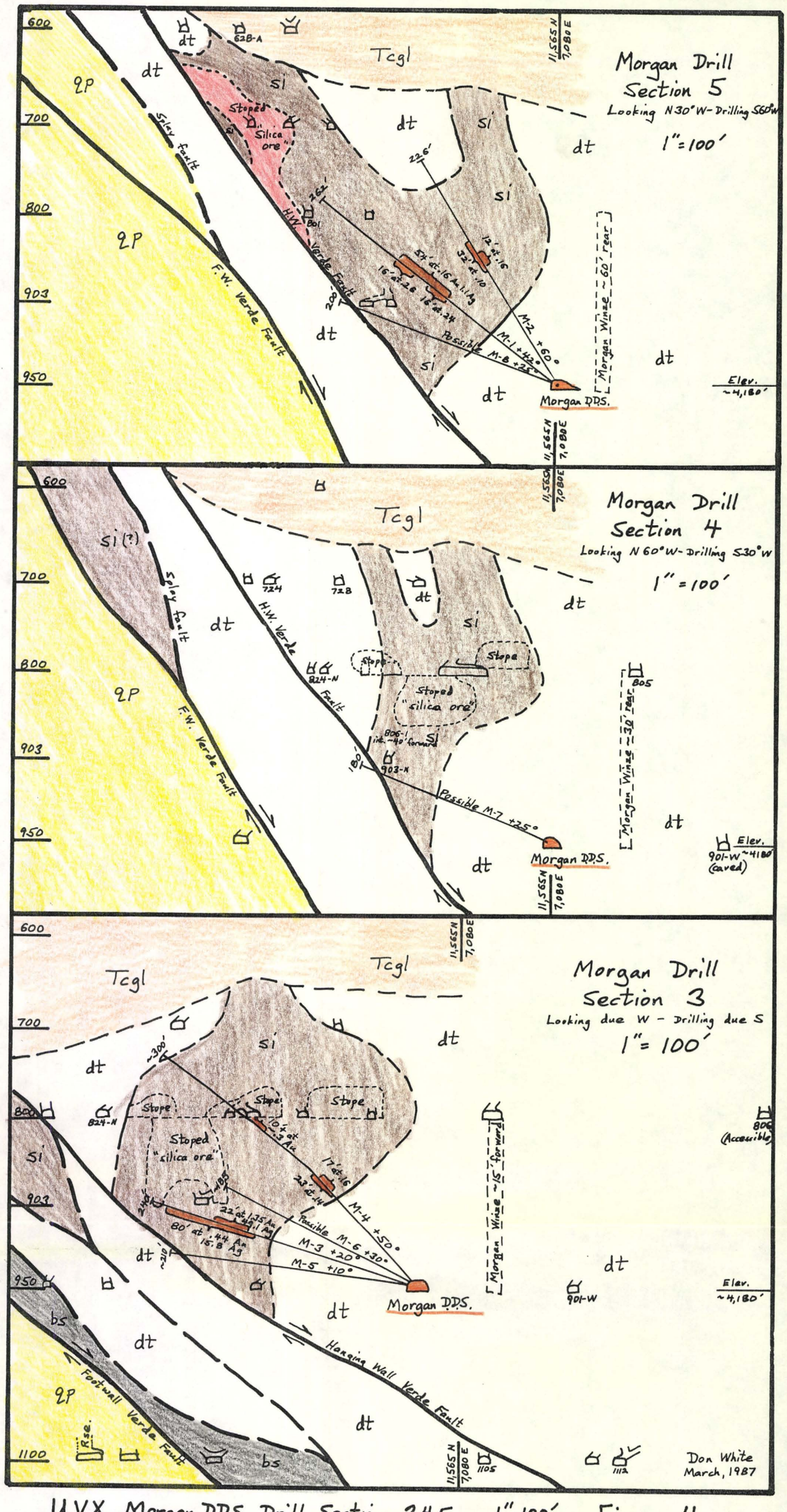
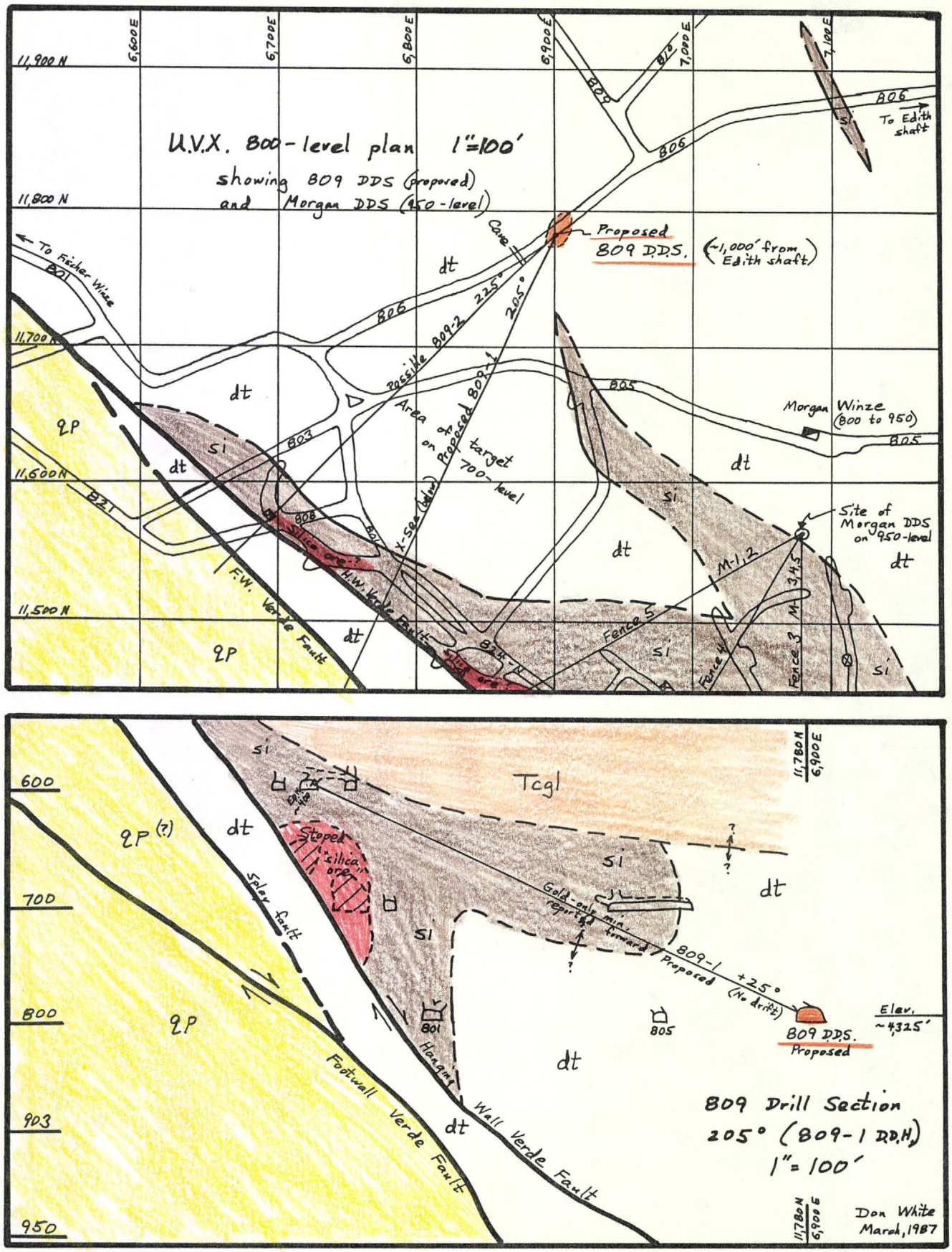

U.V.X. X-SEC. E-E'
Looking N56°W at plane of 1985-86 drilling from the 806 D.D.S. to the Verde target area
E (S.W.)
(NE) E'
600
700
800
903
950
1100
Tcgl
Dls
Ꞓss
Altered dt
Alt'd dt
si
dt
sch
qp
ms
bs
stope-T
806 stope ms
806 D.D.S.
DDH 806-1
64' of .11 oz/t Au 1.4 oz/t Ag
13' of .24 oz/t Au 2.2 oz/t Ag
6' of .12 Au 1.1 Ag
10' of .18 oz/t Au .9 oz/t Ag
903-N
E.O.H. 633'
901-W
905-N
1101-W
1105 1112
Footwall Verde Fault
Hanging Wall Verde Fault
Geologic symbols same as in Fig 2.
Scale in feet
0 20 40 60 80 100 200
Updated to March, 1987
D.C. White

Figure 3



U.V.X. Morgan DDS Drill Sections 3,4,5. 1" = 100' Figure 4



Plan + section of proposed drilling from 809 D.D.S. to up-rake NNW end of Verde target area, U.V.X. 1"=100'

Figure 5

To: Anthony F. Budge

From: Carole A. O'Brien

Date: June 8, 1987

The attached schematic plan shows the proposed drill stations, drifts, etc.

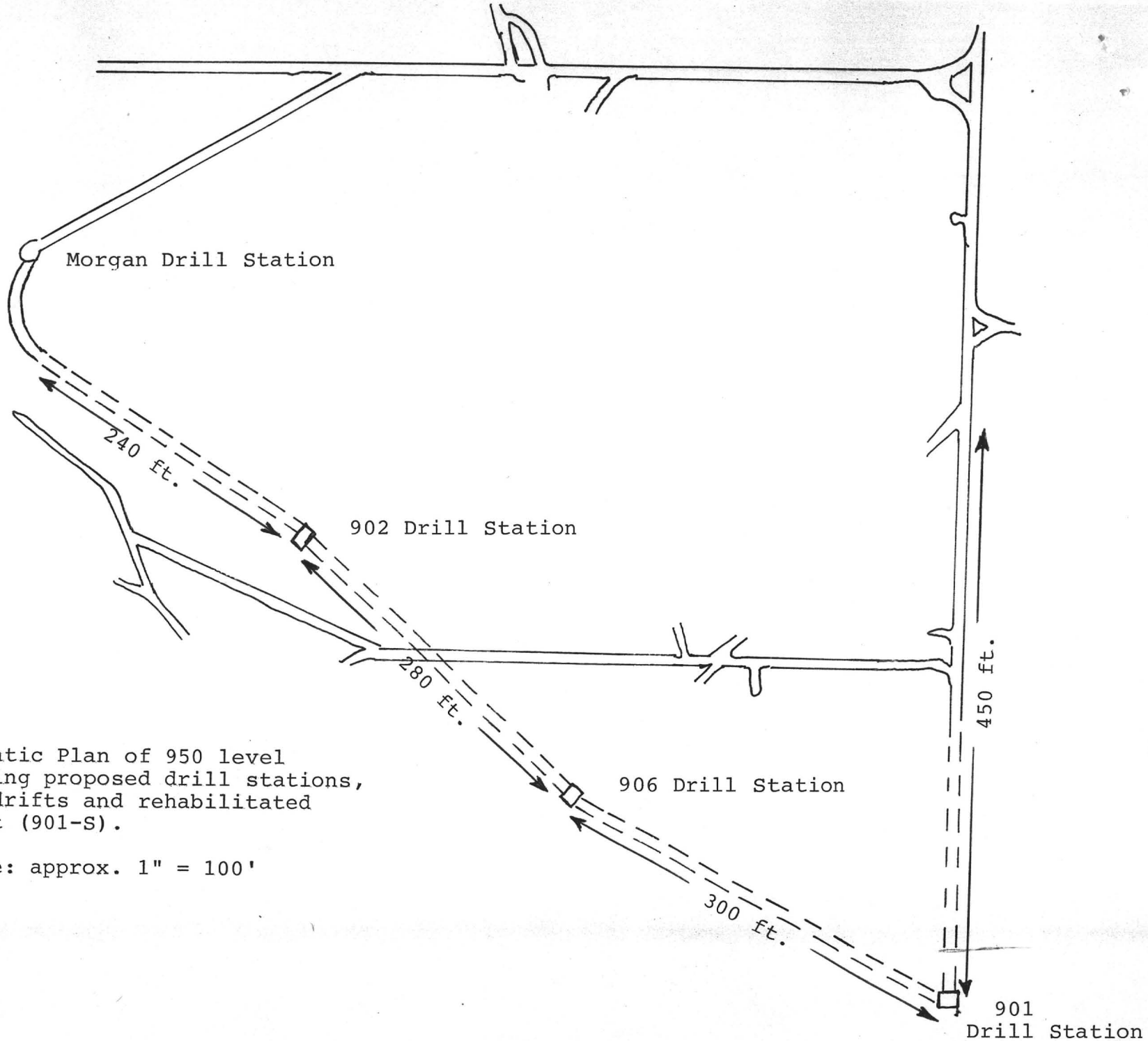
The M-3 zone, according to Don and Bob Hodder's memo had dimensions of 160 ft. x 85 ft. x 44 ft. wide = approx. 600,000 cu.ft., or 46,000 tons at a factor of 13 cu.ft./ton.

The higher grade core was 160 x 85 x 15, or, 13,600 tons. My polygon method indicated 12,900 tons. So 13,000 tons is probably a good number. As to grade, it all depends on how you treat the high grade intercept in hole M-3. Don and Bob Hodder discounted it and came up with average of 0.23. I included it and came up with 0.43. We could split the difference and have 0.33 oz/t.

A best guess estimate on the 809 zone now is perhaps 100 ft. (length) x 80 ft. (height) x 35 ft. wide, or about 20,000 tons (about half a "target"). The grade would be between 0.15 and 0.20 oz/t. Again, you could probably select a smaller, high grade core from this.

In each of 801-1 and 809-2, we intercepted a small chert zone at the beginning of the hole, but in either case did not carry any value. In 809-3 this intercept from 55 ft. to 68 ft. ran 0.21 oz/t. The hole is at 264 ft. but in gougy diorite. Don suspects the hole may have deviated. He is trying to obtain the survey camera from McCabe. If we don't get back into the chert by 300 ft., will stop the hole.

Will check on compressor discount.



Schematic Plan of 950 level showing proposed drill stations, new drifts and rehabilitated drift (901-S).

Scale: approx. 1" = 100'

To: Anthony F. Budge

From: Carole A. O'Brien

Date: June 5, 1987

Package leaving today with:

(1) 8 more applications; 2 possible candidates; one received directly not related to our ad.

(2) accounts including DMEA statement, P. Hahn statement and monthly report, Don White statement and report. Some of these are duplicates of what you have received on the telecopier.

(3) Mortgage information from John Howard

(4) miscellaneous.

A proposed form letter for the unsuccessful candidates is also enclosed for your comments.

With regards to your comments and inquiries:

If we can obtain some reasonably reliable mining cost figures, we should be able to produce this plan in-house with help from Don, Joe, Pete and Howard, certainly by the end of the month. The plan will only be as reliable as the data it contains. At this point in time, most of its contents will be mere speculation. My next sheet shows a very generalized plan based on Don's target areas on the 950 plan and using the estimates contained in his and Bob Hodder's memo of 5-15-87, of 46,000 tons of material grading 0.15 oz/t gold and 2.6 oz/t silver.

In regards to drilling from the 809 station, it would be nice to know whether we can expect 50 ft. or 100 ft. of vertical continuity in say, the 809-2 intercept. If we just want confirmation that a mineralized zone exists, we can quit with 809-4. We shall have only drilled about 1200 ft. after completion of 809-4. If we commit to finding these "targets", a few more holes will go a long way in defining the necessary tons, and save us the inconvenience and cost of bringing another drill rig back to the same location.

On other fronts, it snowed in Montana on Monday! Brian Gavin called this afternoon. Their field test of the VLF unit was successful and I told him to go ahead for the 10 day survey. Approximate cost: $2500. Progress report due next week.

Some assays trickling in from Cimarron project. Hole 113 in the West Adit bottomed in 0.228 oz/t in interval 295 to 300 ft. The entire hole, from 135 to 300 averaged 0.029; the last 40 ft. averaged 0.059. It will be difficult to make any judgements until all results are obtained and plotted. P. Hahn has an outside assignment which will preclude his working on the project from June 13 until June 30. This should not have an adverse effect on our trying to sell the property. It will take a little while to screen out the prospective buyers and contact them.

Don Ranta, Exploration Manager for Phelps Dodge, called in regards to the letter we sent to Pat Ryan. He said he would check on our inquiries concerning subsidence monitoring and the Tuzigoot tails. Joint venture or lease of their property was out of the question as they prefer "to explore on their own property." He is visiting the Jerome area today, a first visit since he came on with Phelps Dodge last year. He is supposed to meet with Don briefly. Will report later.

John Hunt contacted me again recently concerning his continuing interest in joint venturing on the Vulture to explore for the high grade extensions. He doesn't want to have to make any up-front cash payments. He will probably want a majority interest in any portions of the property he may want to cover. Do you have any interest in pursuing this?

Regards,

Carole

Assumptions:

The M-3 zone represents a typical "target" in the Verde area, containing 46,000 tons of 0.15 oz/t gold and 2.6 oz/t silver, or an equivalent grade of 0.19 oz/t total gold.

Therefore, our "targets" would each contain about 8,500 ounces.

"Targets" are M-3, 809, 901, 902 and 906 for a total of 42,500 ounces.

The M-3 "target" has been identified.

We are currently drilling the 809 "target"

The 901 "target" will be accessed from the 901-S drift:

450 ft. of drift to rehabilitate at $300/ft	$135,000.00
2000 ft. of drilling at $50/ft	$100,000.00

The 902 "target" will be accessed from the 902 DDS:

240 ft. of new drift (underway)	$60,000.00
2000 ft. of drilling at $50/ft	$100,000.00

The 906 "target" will be accessed by the 906 DDS:

280 ft. of new drift at $250/ft.	$70,000.00
2000 ft. of drilling at $50/ft.	$100,000.00

Connecting drift between 901 DDS and 906 DDS:

300 ft. of new drift at $250/ft.	$75,000.00
Sub-total	$640,000.00
More realistically: 9 mos. x $100,000/month	$900,000.00
Total expenditures to date:	$1,554,102.83
Total	$2,454,102.83

If all "targets" are located, and 42,500 ounces indicated:

Gross at $450/ounce		$19,125,000.00
Mining at $300/ounce (=$60/ton)	-	$12,750,000.00
Net smelter at 85%		$5,418,750.00
Net from Verde		$4,168,125.00
Net Profit after recovery of $2.5 million in expenditures		$1,668,125.00

TO: CAROLE O'BRIEN

FROM: TONY BUDGE June 8, 1987

Carole,

To better understand your Friday scenario of the UVX, will you please fax:-

1. A sketch showing the [illegible] of the drill stations and the length of new [illegible] drills.

2. The approximate [illegible] so that I can get a better feel for the [illegible] the most sensitive [illegible] that MI could have [illegible] program [illegible]

3. [illegible] we do not yet know [illegible] on length, thickness [illegible]

   We should [illegible] basis [illegible] months).

   [illegible] if we [illegible]

I will call you [illegible] information as soon as possible.

Tony

MEMORANDUM

TO: Carole A. O'Brien

FROM: D.C. White & R.W. Hodder

DATE: May 15, 1987

SUBJECT: Review of drill holes M-1 through M-11, the M-3 zone in the Verde area of the UVX Gold Project -- as a followup to our memorandum of November 15, 1986

INTRODUCTION:

This memorandum consolidates information gained through drilling holes M-1 through M-11 from the Morgan drill station on the 950 level and expresses that information as a preliminary estimate of tons and grade as compared to the projections of November 15, 1986.

PRELIMINARY ESTIMATE:

There is now sufficient drilling in the M-3 zone, which represents approximately one-fifth of the Verde area, to form the basis of a drill-indicated reserve calculation and a preliminary economic assessment which can be extrapolated over the entire Verde area. Both a drill-indicated reserve calculation and an economic assessment will require a carefully prepared set of plans for the 950, 903 and 800 levels plus vertical cross sections and longitudinal sections. These have yet to be projected from the fan of holes drilled from one site through an arc of 78°. Without these plans and sections to give perspective and measuration of shape, size and average grade, the following figures are simply a best effort preliminary estimate drawn from work sheets and drill logs.

A review of drill hole intersections (Table 1) indicates two types of material to be considered in a reserve and economic estimate: 1) a relatively high grade, small tonnage of siliceous grit-like material characterized by drill hole M-3; 2) a relatively low grade, larger tonnage of less siliceous and often iron-bearing material characterized by brecciated chert flanking the higher grade siliceous grit-like material as in hole 9.

TABLE 2

Estimate of tons and grade, M-3 zone, Verde area for small tonnage, high grade, low iron:

Drill hole	The thickness of intersection	Au (oz/t)	Ag (oz/t)	Remarks
M-6	8'	0.43	8.0	Continuing intersection of high grade in siliceous grit

U.V.X. VERDE TARGET AREA DRILLING/ASSAY SUMMARY

Drill Fence	D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
	806-1	-4°	.87	514-527	11	.24	2.2	504-594	78	.09	1.4
				568-578	9	.18	0.9				
Fence 5 Morgan DDS	M-1	+42°	.87	122-138	14	.24	1.5	122-176	47	.17	1.1
				157-176	16	.23	1.6				
	M-2	+60°	1.00	124-136	12	.16	1.5	118-150	32	.10	1.4
Fence 3 Morgan DDS	M-3	+20°	.70	151-185	24	.88	32.5	146-233+	61+	.41	14.6
	M-4	+50°	.50	107-130	12	.14	3.4	107-235	64	.09	1.8
				190-203	7	.29	2.1				
	M-5	+10°	.70	None	--	--	--	None	--	--	--
	M-6	+30°	.70	158-178	14	.40	5.2	148-195+	33+	.26	6.7
Fence 5	M-7	+25°	.87	None	--	--	--	None	--	--	--
Fence 4	M-8	+40°	.87	90-94	4	.22	3.7	90-144	47	.10	1.0
				107-118	10	.17	0.6				
S15°W	M-9	+20°	.77	104-121	13	.39	1.8	104-157	41	.19	1.6
S17°E	M-10	+23°	Deflected(?)	None	--	--	--	None	--	--	--
S7°E	M-11	+25°	.70	168-177	6	.32	9.7	168-210+	29+	.26	7.3
				190-210+	14+	.33	7.4				

Table 1

Compiled by Don White

May, 1987

Drill hole	The thickness of intersection	Au (oz/t)	Ag (oz/t)	Remarks
M-8	26'	0.12	1.1	Includes high grade intercepts separated by low grade, all in siliceous grit
M-9	21'	0.3	1.9	Continuous high grade interval in siliceous grit which includes 9' of 0.09 Au, 1.2 Ag in siliceous footwall
M-11	13'	0.22	7.5	Continuous interval in siliceous grit
M-4	6'	0.18	3.3)	In non-ferruginous chert which is not as siliceous as the grit. Two separate intervals
	7'	0.29	2.1)	
M-1	14'	0.24	1.5)	Two separated intervals in limanitic, siliceous grit
	16'	0.23	1.6)	
Averages	14'	0.23	2.8	
M-3	24'	Use the above averages to null the single sample bias		Continuous interval in siliceous grit
Overall Averages	15'	0.23	2.8	

This material has a strike length of 160', a vertical dimension at the north end of 50' and at the south end 120'. This provides an area in longitudinal section of 13,600 sq. ft. which, with an average width of 15 ft. gives a volume of 204,000 cu. ft.

The siliceous grit has an estimated tonnage factor of 15 cu. ft/ton.

Hence, the small tonnage, high grade, low iron material consists of an estimated:

13,600 tons of 0.23 oz Au, 2.5 oz Ag/ton
or 3,100 oz Au, 34,000 oz Ag

This is comparable to the material noted for the Verde area under "Remarks" in Table 3 which is reproduced from the memo of November 15, 1986.

U.V.X. GOLD PROJECT - DRILLING/ASSAY SUMMARY

Area/DDH	Thickness (ft)	Grade (oz/t) Au	Grade (oz/t) Ag	Length/Height (ft)	Tons[1] (K)	Contained oz Au(K)	REMARKS
Florencia area							
UVX-1	20	.20	1.5				Phelps Dodge Corp holes from 1104 D.D.S; intercepts closer to Florencia fault and main massive sulfide body than DMEA drilling
UVX-2	35	.18	.4				
1104-1	15	.11	.5				
1104-2	14	.14	.4				Other mineralization deep in hole relates to Verde area
1104-3	19	.12	.3				
TOTAL	21	.16	.6	150/200	52	8	Not counting areas south of Florencia fault which are mineralized but likely caved into main orebody's void. Could be reached by cleanup of 200' old drifts.
1205/Gold stope area							
901-1	6	.15	.6				Aborted in hanging wall, drilling difficulties
901-2	-	-	-				No significant gold; drilled beneath host lithology
901-3	7	.18	3.1				Possibly lower grade than reality because of poor core recovery (20%) in 10' over back of 903 sublevel drift.
Compilation from old data	20	.30	1.5	Irregular	20	6	Could be reached by cleanup of 200' old drifts.
Verde area							
806-1	64	.11	1.4	500/200	530	58	Within which are higher grade zones such as 13 ft. averaging 0.24 oz/t Au, 2.2 oz/t Ag.
May 15, 1987 Revision	44	.15	2.6	960/68	276*	42*	
U.V.X. TOTAL[2]	-	.12	1.3	---	588	70	Plus 750,000 contained ounces Ag.

(1) Tonnage factor = 12 cu. ft. per ton

(2) All three areas weighted by tons; based upon two P.D. drill holes, seven DMEA drill holes, old data in proximity to the gold stope, and estimates of deposit dimensions based upon compilation of old mine geology data. Grade could be increased by a factor of two if only higher grade intercepts (≥ 0.2 oz/t Au) are used but tonnage would be cut by at least half.

* Arrived at by assuming that the M-3 zone is representative of the Verde area and 1/6 of that area.

Reproduced from Nov. 15, 1986 memo with May 15, 1987 ~~tentative~~ updates as noted

TABLE 3

Estimate of tons and grade, M-3 zone, Verde area for large tonnage, low grade, iron-bearing:

All drill intercepts except M-3 and 806-1 are herein averaged to give a true width of 42 feet, with 0.15 ag Zu, 2.6 oz Ag/ton.

The thickness of M-3, 61 feet, was averaged into this to give an overall width of 44 feet. The grade of M-3 was cut to the average grade to remove the one-sample bias.

Length and vertical extent remain as in the previous estimate for the smaller tonnage, and hence 44 x 13,600 is 600,000 cu. ft. which at 13 cu. ft/ton is 46,000 tons.

The tonnage factor of 13 reflects the relative proportions of this tonnage as 1/3 siliceous grit with a factor of 15, 1/3 non-ferruginous chert breccia with a factor of 13, and 1/3 ferruginous chert with a factor of 11.

Hence, 46,000 tons of 0.15 oz Au, 2.6 oz Ag/ton
or 6,900 oz Au, 120,000 oz Ag

The M-3 Zone has one-sixth of the strike length postulated for the Verde Area (Table 3). Assuming the M-3 Zone is a representative sample of the Verde Area then one must reduce our previous estimate of width from 64 to 44 feet, and of height from 200 to 68 feet. There is also a decrease in tons because the tonnage factor has to be changed from 12 to 13 in recog nition of the less dense silica grit material which contains the greatest amount of gold.

Some of this reduction in size and tons is offset by an increase in grade from 0.11 to 0.15 oz Au/t and 1.4 to 2.6 oz /t Ag. Nevertheless there is an appreciable decrease in the estimate of total contained ounces in the Verde Area and the UVX total

We have previously not considered the area of prospective chert south of the Florencia fault because it was not within rang range of any drill site. However, if a southern drill site was established on the 950 level to reach the south part of the Verde area, then the chert across the Florencia fault could be reached. Assays along old workings in this area indicate 0.25 oz Au/ t across 40 feet. This is the nearest area in which one could explore for additional ounces

U.V.X. VERDE TARGET AREA DRILLHOLE SUMMARY

D.D.H.	Collar location (UVX grid) N	E	Elev.	Orientation at collar: Bearing	Inclination	E.O.H. Inclination	Length of hole	Chert Intercepts	Angle of Intercept to bedding	Remarks
806-1	11,890	7,335	4,335	S33.5 W	-4°	-12°	633	84-108 481-615	60°	Drilled Jan, 1986
M-1	Morgan D.D.S. 11,565	7,060	4,177	S60°W (fence 5)	+42°	+45°	262	70-247	60°	Intercept 100' NW of 806-1
M-2					+60°	+60°	226	76-85 109-205	90°	Up-dip from M-1
M-3				S2°E (fence 3)	+20°	Not Surveyed	233	131-233+	45°	Aborted at void 233-240
M-4					+50°	+48°	295	100-280	30°	Far up-dip from M-3
M-5					+10°	Not Surveyed	198	164-198+	45°	Down-dip from M-3
M-6					+30°	"	195	148-195+	45°	Little up-dip from M-3
M-7	———			S60°W (fence 5)	+25°	"	129	84-114	60°	Beneath M-1
M-8	———			S30°W (fence 4)	+25°	"	187	74-187+	60°	Between M-1 and M-3
M-9	———			S15°W	+20°	"	183	83-183+	50°	NW of M-3
M-10	———			S17°E	+23°	"	278	None	Deflected(?)	Too far SE of M-3
M-11	———			S7°E	+25°	"	210	152-210+	45°	SE of M-3

Table 1

Compiled by Don White

May, 1987

Tuesday

Carole —

I'll have copies of all this and others for A.F.B. when he comes to Jerome (Thursday?)

Don

U.V.X. VERDE TARGET AREA DRILLING/ASSAY SUMMARY

Drill Fence	D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
	806-1	-4°	.87	514-527 568-578	11 9	.24 .18	2.2 0.9	504-594	78	.09	1.4
Fence 5 Morgan DDS	M-1	+42°	.87	122-138 157-176	14 16	.24 .23	1.5 1.6	122-176	47	.17	1.1
Fence 5 Morgan DDS	M-2	+60°	1.00	124-136	12	.16	1.5	118-150	32	.10	1.4
Fence 3 Morgan DDS	M-3	+20°	.70	151-185	24	.88	32.5	146-233+	61+	.41	14.6
Fence 3 Morgan DDS	M-4	+50°	.50	107-130 190-203	12 7	.14 .29	3.4 2.1	107-235	64	.09	1.8
Fence 3 Morgan DDS	M-5	+10°	.70	None	--	--	--	None	--	--	--
Fence 3 Morgan DDS	M-6	+30°	.70	158-178	14	.40	5.2	148-195+	33+	.26	6.7
Fence 5	M-7	+25°	.87	None	--	--	--	None	--	--	--
Fence 4	M-8	+40°	.87	90-94 107-118	4 10	.22 .17	3.7 0.6	90-144	47	.10	1.0
S15°W	M-9	+20°	.77	104-121	13	.39	1.8	104-157	41	.19	1.6
S17°E	M-10	+23°	Deflected(?)	None	--	--	--	None	--	--	--
S7°E	M-11	+25°	.70	168-177 190-210+	6 14+	.32 .33	9.7 7.4	168-210+	29+	.26	7.3
				average 12' (166)		0.35	7.3	9 (432) average 48		0.18	

Table 2

Compiled by Don White

May, 1987

Assumptions:

The M-3 zone represents a typical "target" in the Verde area, containing 46,000 tons of 0.15 oz/t gold and 2.6 oz/t silver, or an equivalent grade of 0.19 oz/t total gold.

Therefore, our "targets" would each contain about 8,500 ounces.

"Targets" are M-3, 809, 901, 902 and 906 for a total of 42,500 ounces.

The M-3 "target" has been identified.

We are currently drilling the 809 "target"

The 901 "target" will be accessed from the 901-S drift:

450 ft. of drift to rehabilitate at $300/ft	$135,000.00
2000 ft. of drilling at $50/ft	$100,000.00

The 902 "target" will be accessed from the 902 DDS:

240 ft. of new drift (underway)	$60,000.00
2000 ft. of drilling at $50/ft	$100,000.00

The 906 "target" will be accessed by the 906 DDS:

280 ft. of new drift at $250/ft.	$70,000.00
2000 ft. of drilling at $50/ft.	$100,000.00

Connecting drift between 901 DDS and 906 DDS:

300 ft. of new drift at $250/ft.	$75,000.00
Sub-total	$640,000.00
More realistically: 9 mos. x $100,000/month	$900,000.00
Total expenditures to 5-31-87:	$1,578,981.18
Total	$2,478,981.18

If all "targets" are located, and 42,500 ounces indicated:

Gross at $450/ounce	$19,125,000.00
Mining at $300/ounce (=$60/ton) -	$12,750,000.00
Net smelter at 85%	$5,418,750.00
Net from Verde	$4,168,125.00
Net Profit after recovery of $2.5 million in expenditures	$1,668,125.00

809 D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole	Chert Intercepts	Angle of Intercept to Bedding	Remarks
	Azimuth	Inclination				
809-1	205° (S25°W)	+23°	336	59-74 179-245 304-336	45°	
809-2	185° (S5°W)	+23°	240	39-48 102-216	45°	
809-3	170° (S10°E)	-5° (-7° at 280')	370	49-97 105-152 279-370+	35°	
809-4	225° (S45°W)	+23°	369	157-369+	40°	
809-5	185° (S5°W)	+12°	195	80-115 135-190	55°	
809-6	218° (S38°W)	+23°			45°	

* 809 D.D.S. location; U.V.X. Mine - 800 level
Mine grid 11,790N
6,905E
4,330 Elev.

Compiled by Don White
Updated to July, 1987

Carole

809 D.D.S. DRILLING/ASSAY SUMMARY

D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
809-1	+23°	.70	200-214	10	.22	0.8	187-234	33	.15	1.4
809-2	+23°	.70	176-194	13	.44	1.5	156-209	37	.21	1.4
809-3	-5°	.57	55-68 326-343	7 10	.21 .21	0.4 1.2	50-68 287-343	10 32	.17 .15	0.4 1.0
809-4	+23°	.64	235-242 281-330	5 31	.24 .43	1.6 2.7	185-330	93	.22	2.5
809-5	+12°	.82	None				145-168	19	.16	0.6
809-6	+23°	.70								

Compiled by Don White
Updated to July, 1987

MEMORANDUM

To: Anthony F. Budge

From: Carole A. O'Brien

Date: July 2, 1987

Subject: Risk/Reward/Targets
U.V.X. Mine

Mr. Irwin Parrish recommended a report detailing the target, potential, probability and reward for several classes of reserves at the U.V.X. I have spent several days since meeting with Don on Wednesday, June 24, trying to formulate such scenarios.

Parrish states "Recovery rates can be approximated." "Costs to explore, develop and mine can be estimated." "Probability of success can be assigned." All these statements are true, however, they are still only approximations and estimates.

On page 3 of his report, Parrish says, "... it is safe to say that no more than say 100,000 tons of high grade flux ore can be projected." I'm not sure what he suggests by high grade, but if it is 0.25 oz/ton gold and, at a 10:1 ratio, 2.5 oz/ton silver, then that target is certainly worthy of consideration.

A scenario for this 100,000 ton target might be the following:

at a 15 cu.ft. tonnage factor this would equate to a zone 1250 ft. by 80 ft. by 15 ft. wide.

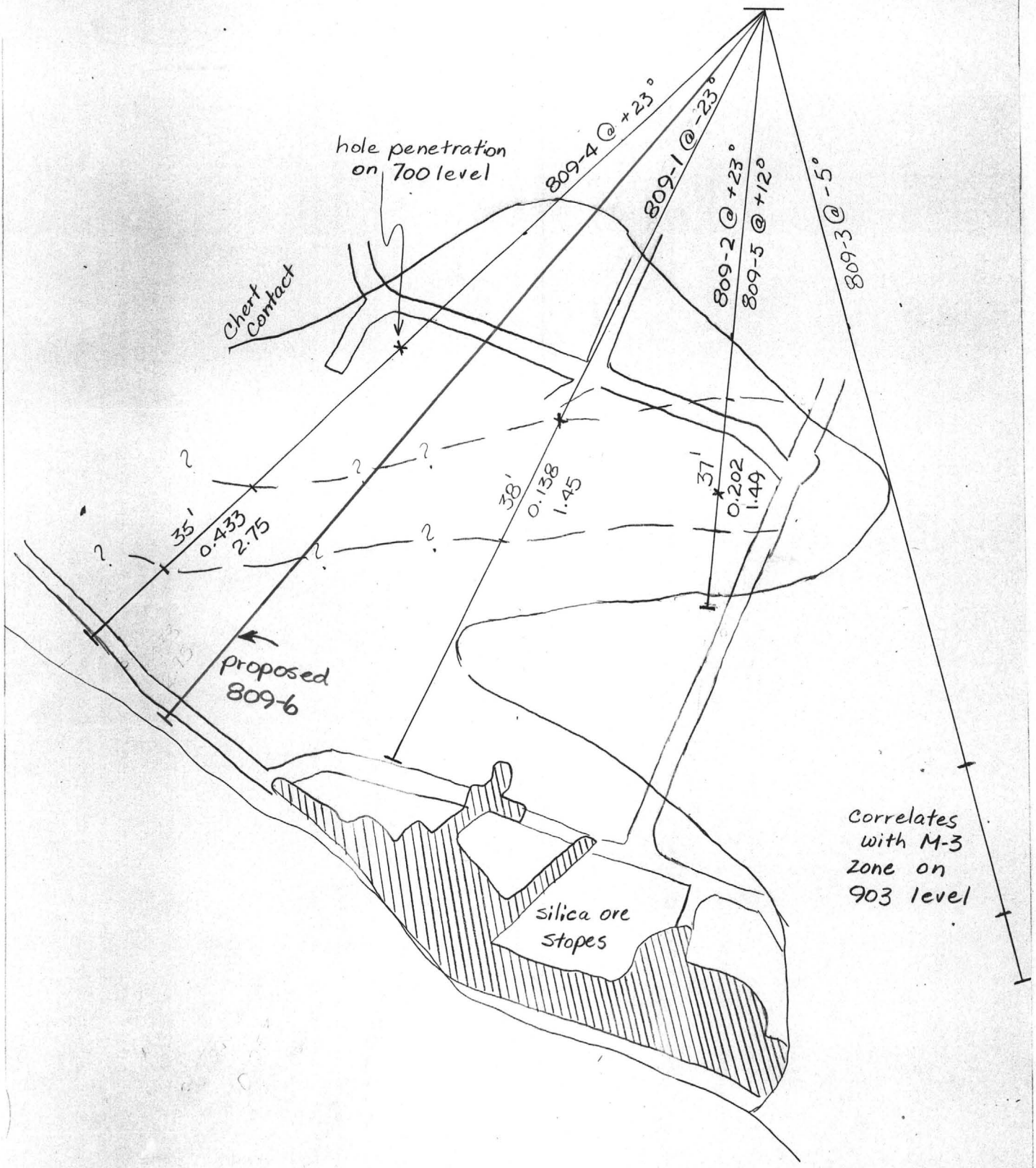
the M-3 zone, as defined in Bob Hodder and Don White's memo of May 15, 1987, contains about 14,000 tons of high grade, flux quality material with 0.23 oz/ton gold and 2.8 oz/t silver.

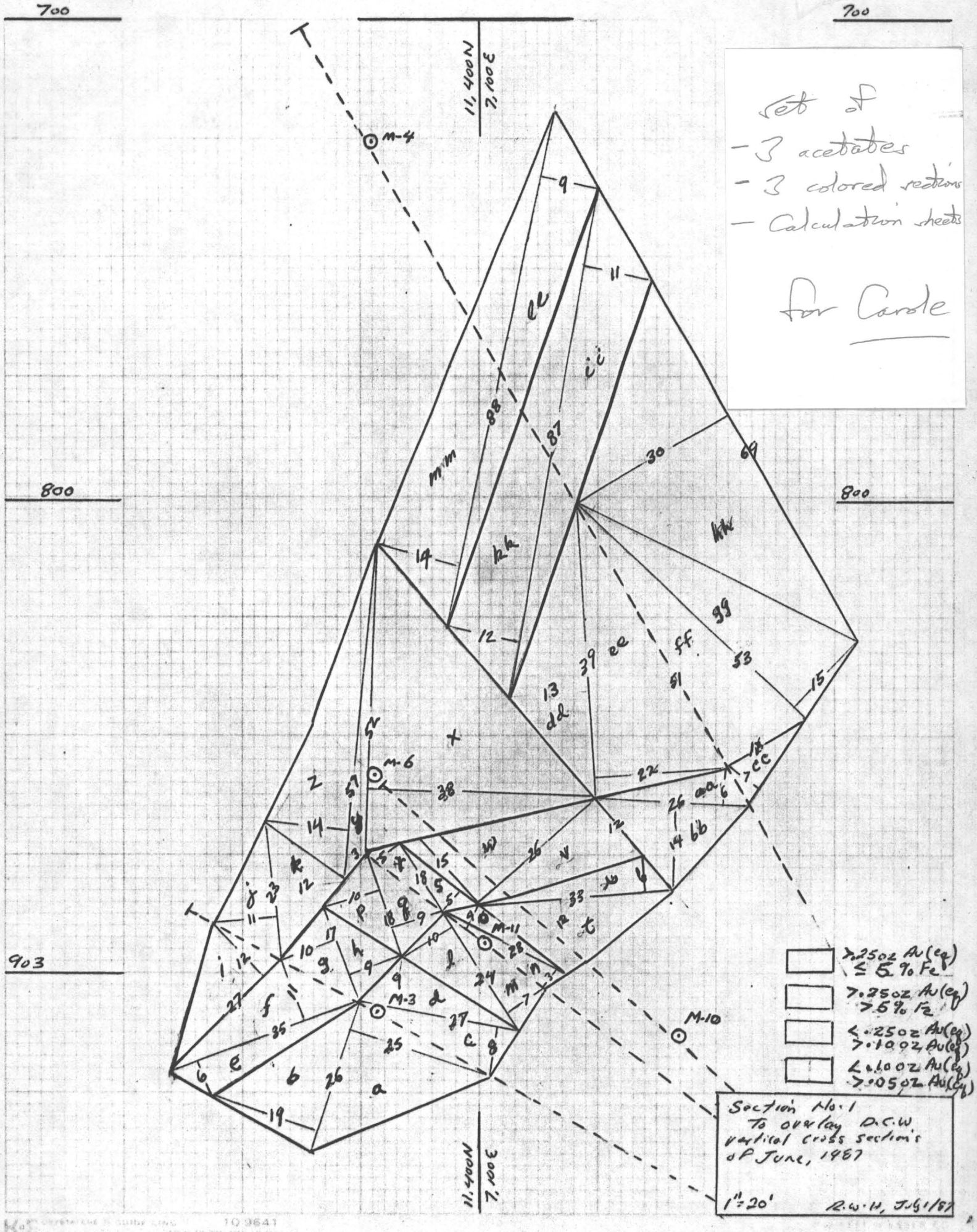
this represents 14 percent of our "target".

drilling from the 809 station, and just considering a strike length of 120 feet between holes 809-1 and 809-2, a vertical height of 80 feet and width of 15 feet, we have about 10,000 tons, or another 10 percent of our "target".

the risk in finding the other 75 percent of our "target" will be another 6 to 9 months of drifting and drilling.

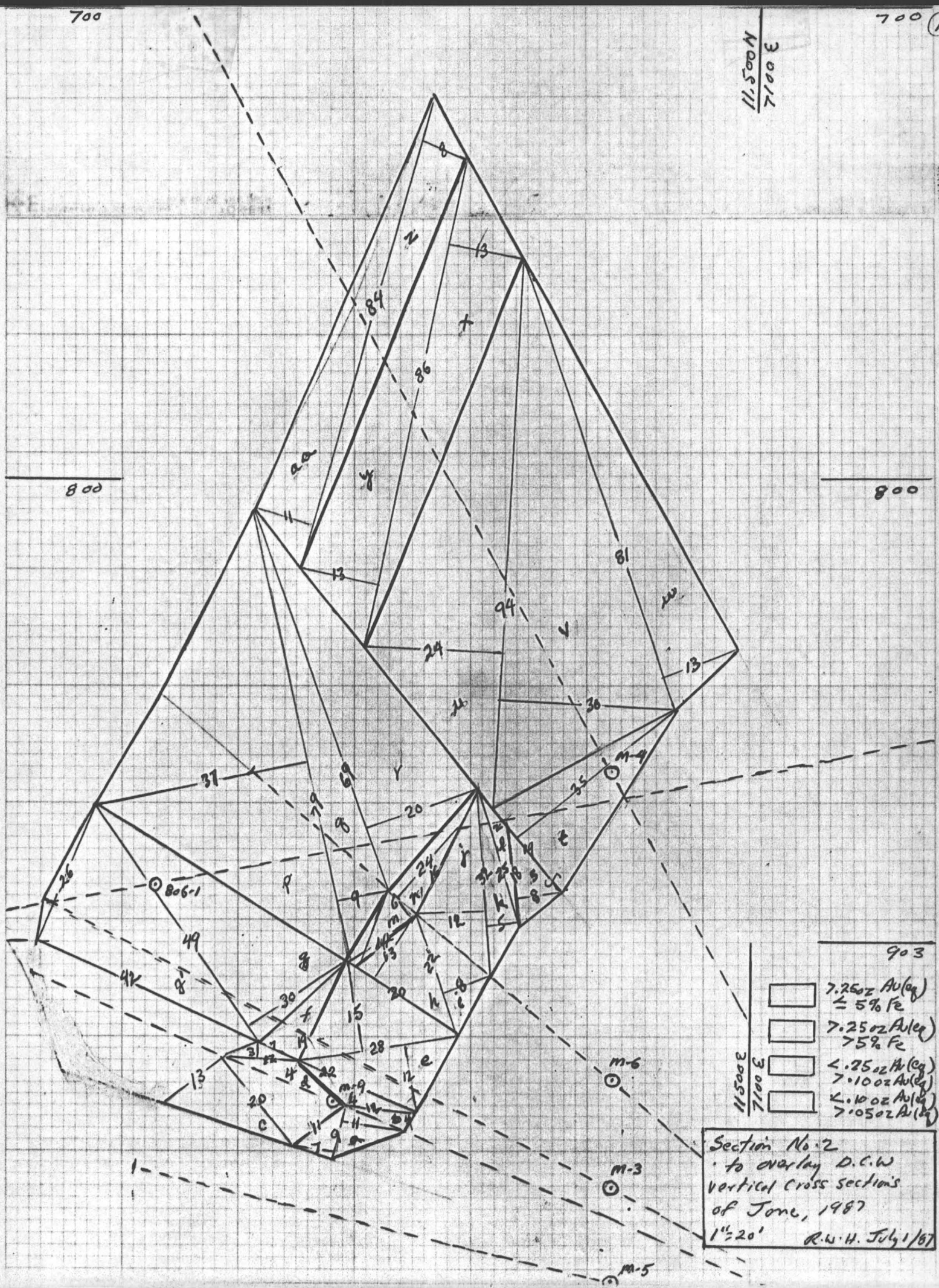
the reward based on 100,000 tons of even 0.20 oz/ton gold and 2.0 oz/ton silver follows on the next page.

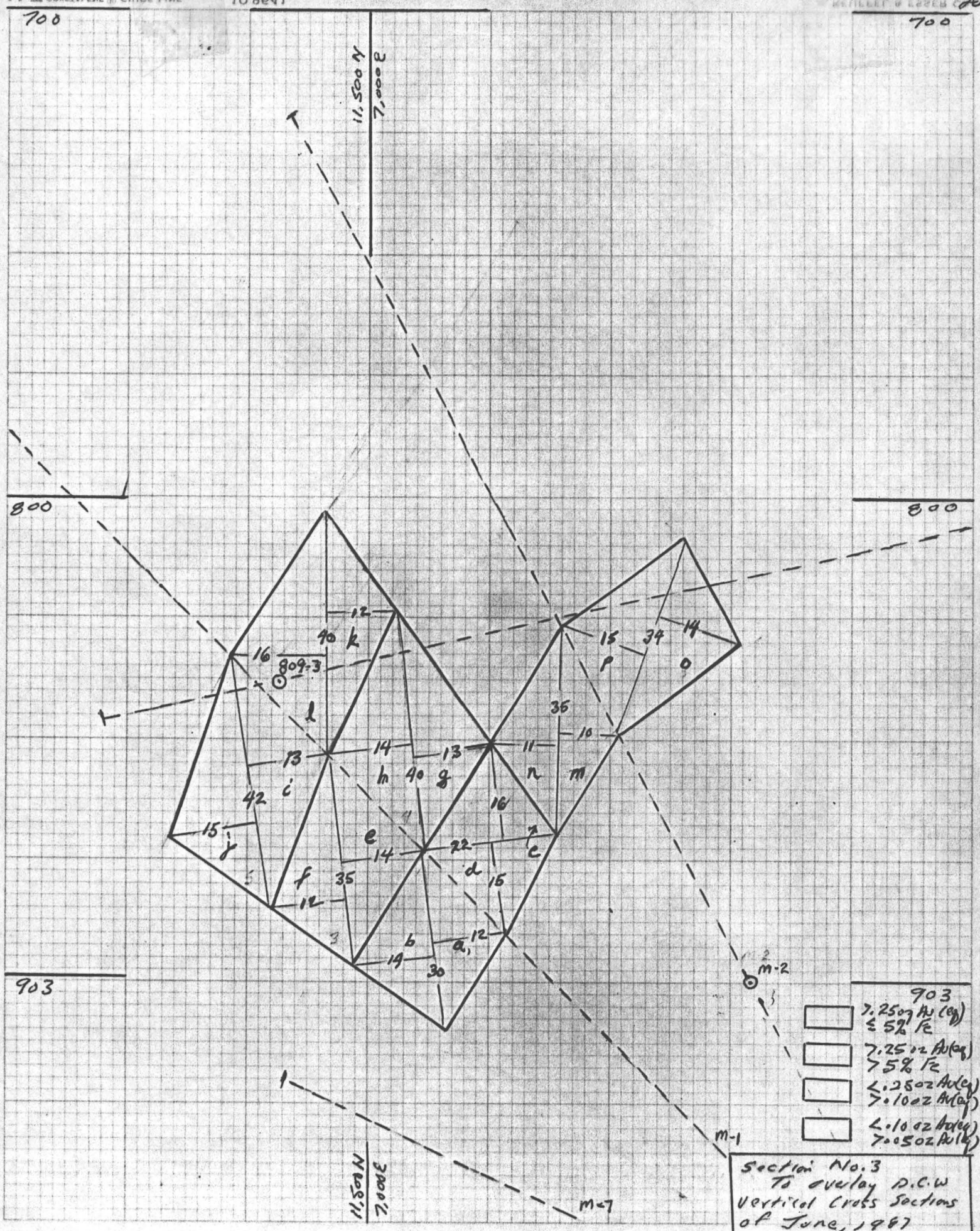

hole penetration on 700 level
809-4 @ +23°
809-1 @ -23°
809-2 @ +23°
809-5 @ +12°
809-3 @ -5°
Chert Contact
35'
0.433
2.75
38'
0.138
1.45
37'
0.202
1.49
proposed 809-6
silica ore stopes
Correlates with M-3 zone on 903 level



set of
- 3 acetates
- 3 colored sections
- Calculation sheets

for Carole


700
700
(16)
11,500N
7100 E
800
800
903
M-4
M-6
M-3
M-5
M-9
B06-1
7.25oz Au(eq)
≤ 5% Fe
7.25oz Au(eq)
>5% Fe
<.25oz Au(eq)
7.10oz Au(eq)
<.10oz Au(eq)
7.05oz Au(eq)
11,500E
7100 E
Section No. 2
to overlay D.C.W
vertical cross section's
of June, 1987
1" = 20'
R.W.H. July 1/87



Section No. 3
To overlay D.C.W
Vertical Cross Sections
of June, 1987

1" = 20'

R. W. H. July 6, 1987

July 1/87
R.W.H.

Composite of tonnages and grade from Section's No. 1, 2, 3.
(high grade, > 2.5 oz Au(eq) / ton

High grade Au(eq) low Fe, tonnage factor 17.5. ie: "grit"

	Tons.	Au(eq)	Fe	Tons × Grade Au(eq)	Fe	Tons, Av. Grade Au(eq) Fe
Section 1.						
M-3	3,208	0.70	3.52	2245.6	11292.	
M-11	1,140	0.483	4.0	550.6	4560	5,536, 0.61 4.[illegible]
M-6	1,186	0.497	7.0	566.6	8316	
	5536			3364	24168	
Section 2						
M-9	600	0.33	3.4	198	2040	
M-3	1,512	0.70	3.52	1058	5322	4,172, 0.55, 5.[illegible]
M-6	2,060	0.497	7.0	1024.	14420	
	4,172			2280	21782	
Section 3						
M-1	2,924	0.261	9.21	763.	26930	
	4,592	0.253	2.11	1162	9689	7,516, 0.26, 4.8
	7516			1925	36619	
					Totals	17,224, 0.44, 5.[illegible]

High grade Au(eq), high Fe, Tonnage factor 11, 14

Section 1						
M-11	1,660	0.363	4.0	603.	6640	
M-6	2,234	0.286	20.0	639.	44680	
M-6	7365	0.253	25.0	1863.	184125	18,300, 0.28, 18.0
M-4	2,036	0.250	20.0	509	40720	
M-4	5,005	0.330	10.0	1652	50,050	
	18,300			5266	326,215	
Section 2.						
M-6	725	0.286	20.0	207	14500	
M-6	12,540	0.253	25.0	3172	313,500	
M-4	2,025	0.250	20.0	506	40,500	20,880, 0.27, 20
M-4	5,590	0.33	10.0	1845	55,900	
	20,880			5730	424,400	
Section 3						
None.						
					Totals	39,180, 0.28 19.[illegible]

July 1/87
R.W.H.

Composite of Tonnages and grade from Sections No 1, 2, 3

Low grade, < 2.5 oz Au(eq), > 0.10 oz Au (eq) / ton.

	Tons	Au(eq)	Fe	Tons × Grade Au(eq)	Fe	Tons	Av. Grade Au(eq)	Fe
Section No. 1								
M-3	2,927	0.209	15.13	612.	44286			
M-3	2,323	0.165	32.47	383	75428	5250	0.19	23
	5,250			995	119714			
Section No. 2								
M-3	335	0.209	15.13	70.	5069			
M-3	5,180	0.165	32.47	855	168195.	5515	0.17	31
	5515			925	173264			
Section No. 3								
M-2	4,305	0.19	2.0	818	8610	4,305	0.19	20
				Totals		15,070	0.18	25

July 1/87
R.W.H

Composite of Tonnages and grade from Sections No. 1, 2, 3

Low, low grade, < 0.10 oz Au(eq), > 0.05 oz Au(eq)/ton

	Tons	Au(eq)	Fe	Tons × Grade Au(eq)	Fe	Tons, Av. Grade Au(eq)	Fe
Section No. 1.							
M-4	12,620	0.076	20.0	959.	252400		
M-4	5,060	0.059	10.0	299	50600	17,680, 0.071, 17	
	17,680			1258	303000		
Section No. 2.							
M-9	1,410	0.092	8.3	130	11703		
M-4	15,325	0.076	20.0	1165	306500		
M-4	3,990	0.059	10.0	235	39900	20,725, 0.073, 17	
	20725			1530	358103		
Section No. 3.							
M-1	4,975	0.066	1.89	328	9403	4,975, 0.066, 2.	
				Totals.		43,380, 0.071, 15.	

July 1/87
RWH

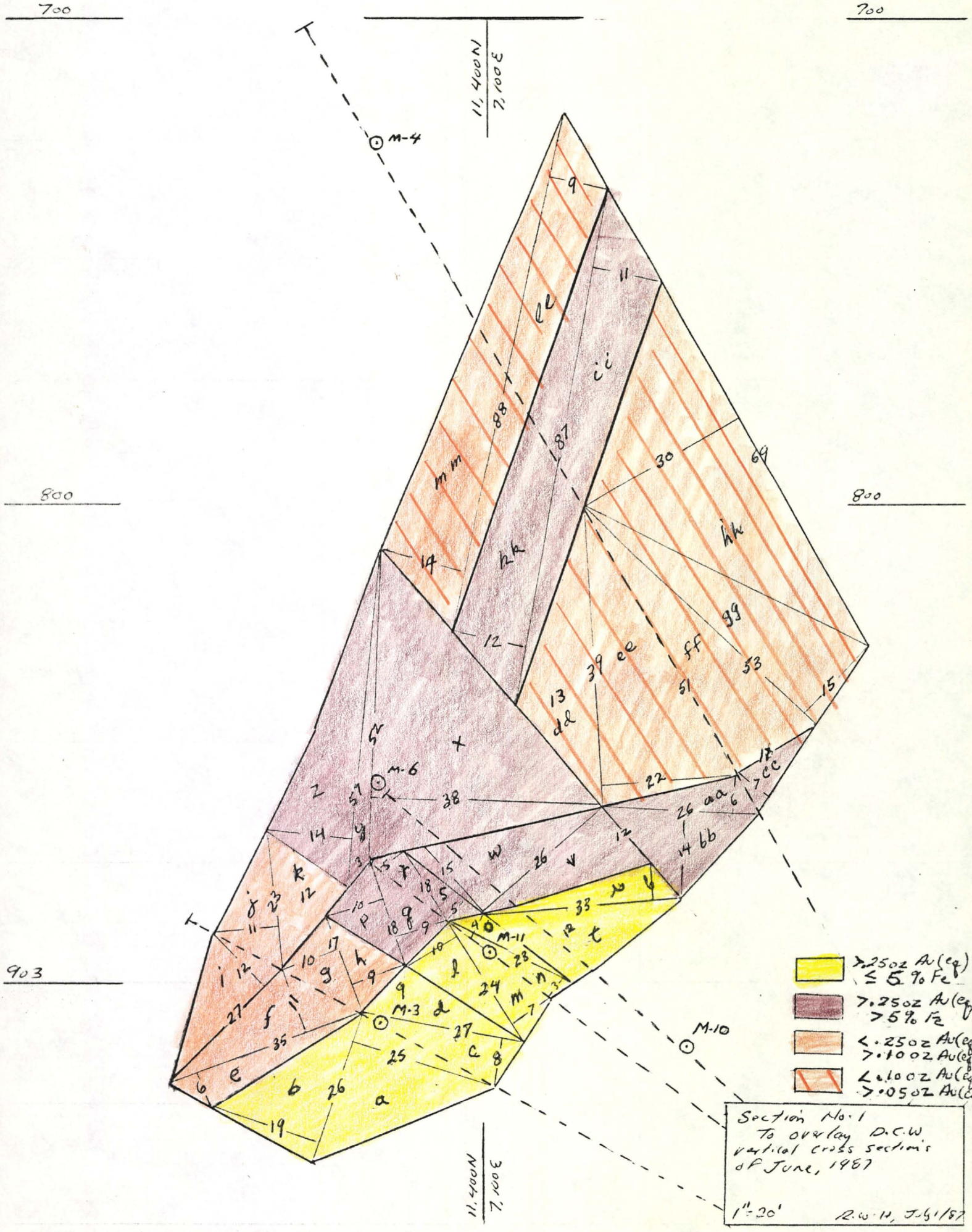
Method of discounting very high assays in hole M-3

All high grade intersections in the high grade gold, low iron, silica grit include those below.

		Core	"True"	Au	Ag	Au(eq)	Fe	
M-3	151-185'	34	24	0.88	32.5	1.44	3.52	24×1.44 = 34.56
M-11	168-177	9	6.3	0.39	9.66	0.483	4.0	6.3×0.483 = 3.04
M-6	148-166	18	12.6	0.314	10.74	0.497	7.0	12.6×0.497 = 6.26
M-9	104-131	27	21.	0.30	1.9	0.33	3.4	21×0.33 = 6.93
M-1	122-138	16	14	0.235	1.52	0.261	9.2	14×0.26 = 3.64

Average 15.5' of 0.698 Au(eq)

Hence, the conclusion to use the average of those intersections which are contiguous within the silica "grit" with low iron content - for the grade in the M-3 intersection. This average grade is 0.70 oz/ton Au(eq) and to use the actual assay of the iron at 3.52%.


700
700
800
800
903
11,400N
7,100E
M-4
M-6
M-11
M-3
M-10
>.25oz Au(eq)
≤ 5% Fe
>.25oz Au(eq)
>5% Fe
<.25oz Au(eq)
>.10oz Au(eq)
<.10oz Au(eq)
>.05oz Au(eq)
Section No. 1
To overlay D.C.W.
vertical cross sections
of June, 1987
1" = 20'
R.W.H. July 1/87

Section No. 1.

July 1/87
R.W.H.

Drill hole interval	Area about drill hole	Width	Tonnage Factor	Tons	Au	Ag	Au(Ag)	Fe
M-3, 151'-185'	a, $\frac{26\times25}{2}=225$	× 70' = 22,750	17.5	1300,	Cut to average		0.70	3.52.
	b, $\frac{26\times19}{2}=247$	× 70' =	17.5	988				
	c, $\frac{27\times8}{2}=108$	× 70' =	17.5	432				
	d, $\frac{27\times9}{2}=122$	× 70' =	17.5.	488				
				3,208				
M-3, 185'-204'	e, $\frac{35\times6}{2}=105$	× 70'	11.0	660,	0.147	3.63	0.209	15.13
	f, $\frac{35\times11}{2}=193$	× 70'	11.0	1228.				
	g, $\frac{17\times10}{2}=85$	× 70'	11.0	541.				
	h, $\frac{17\times9}{2}=77$	× 70'	11.0	490				
				2927				
M-3, 204'-226'	i, $\frac{27\times12}{2}=162$	× 70	14.0	810,	0.110	3.26	0.165	32.47
	j, $\frac{23\times11}{2}=127$	× 70	14.0	635				
	k $\frac{23\times12}{2}=138$	× 70	14.0	878				
				2,323				
M-11, 168-177	l $\frac{24\times10}{2}=120$	× 70	17.5	480.	0.319	9.66	0.483	~4.0
	m $\frac{24\times7}{2}=84$	× 70	17.5	336				
	n $\frac{23\times3}{2}=35$	× 70	17.5	140				
	o $\frac{23\times4}{2}=46$	× 70	17.5	184				
				1140				

Section No. 1

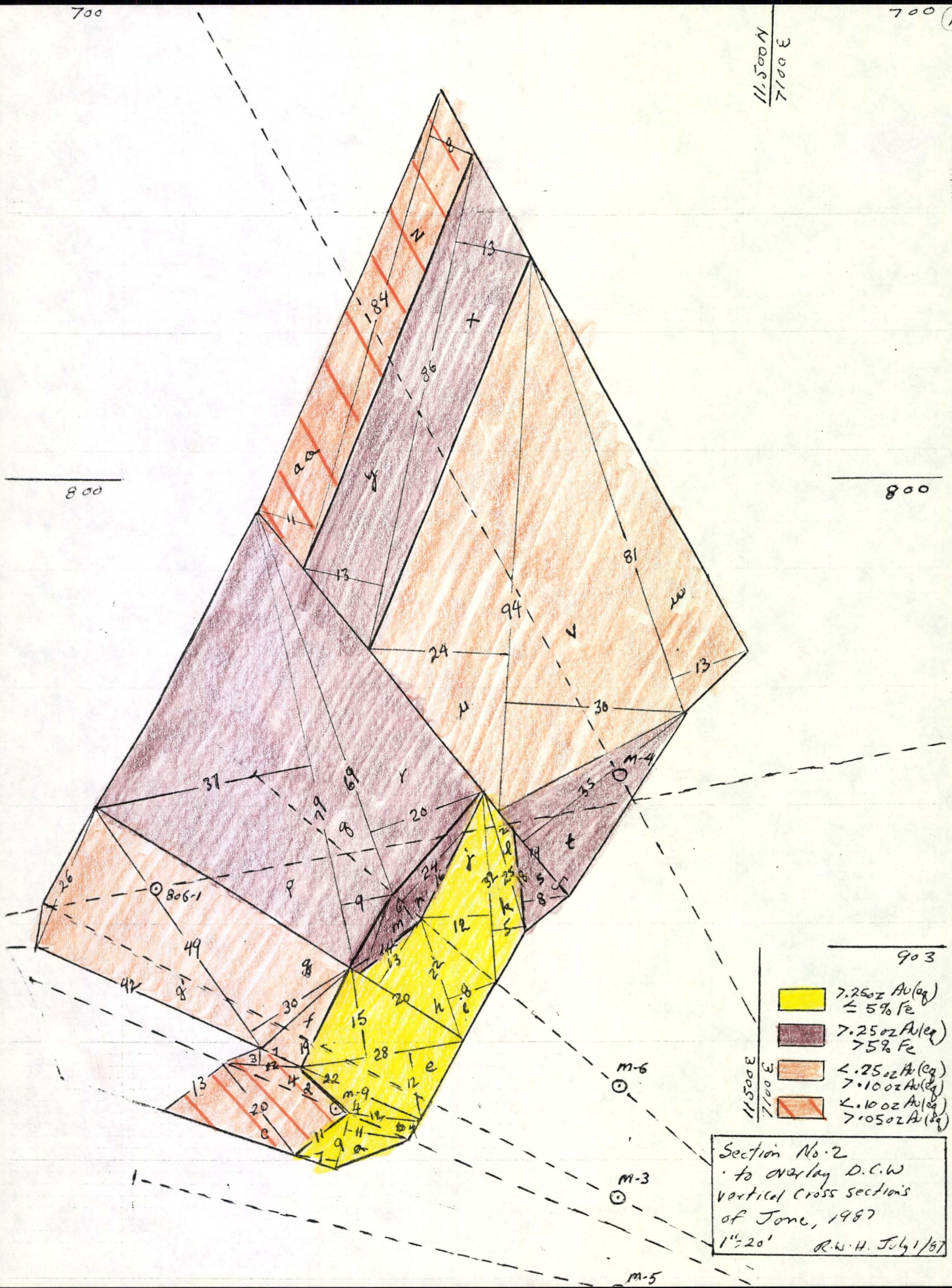
July 1/87
R.W.H.

Drill hole interval	Area about drill hole		Width		Tonnage Factor	Tons	Au	Ag	Au(eq)	Fe
M-11, 177'-210'	p,	$\frac{18\times10}{2}=90$	× 70	=	11	573	0.250	6.63	0.363	~4.0
	q,	$\frac{18\times9}{2}=81$	× 70	=	11	515				
	r	$\frac{18\times5}{2}=45$	× 70	=	11	286				
	s	$\frac{18\times5}{2}=45$	× 70	=	11	286				
						1,660				
M-6, 148'-166'	t	$\frac{33\times12}{2}=198$	× 70		17.5	792,	0.314	10.74	0.497	~7.0
	u	$\frac{33\times6}{2}=99$	× 70		17.5	396				
						1188				
M-6, 166'-180'	v	$\frac{26\times12}{2}=156$	× 70		11	993	0.279	4.12	0.286	~20.0
	w	$\frac{26\times15}{2}=195$	× 70		11	1241				
						2234				
M-6, 180'-195'	x	$\frac{52\times38}{2}=988$	× 70		14	4940	0.180	4.30	0.253	~25.0
	y	$\frac{57\times3}{2}=86$	× 70		14	430				
	z	$\frac{57\times14}{2}=399$	× 70		14	1995				
						7365				
M-4, 115-126	aa,	$\frac{26\times6}{2}=78$	× 70		11	496	0.20	3.0	0.250	~20.0
	bb,	$\frac{26\times14}{2}=182$	× 70		11	1158				
	cc	$\frac{17\times7}{2}=60$	× 70		11	382				
						2036				

Section No. 1

July 1/87
R.W.H.

Drill hole interval	Area about drill hole, width		Tonnage Factor	Tons	Au	Ag	Au(eq)	Fe
M-4, 126'-190'	dd, $\frac{39 \times 13}{2} = 254$	× 70	14.0	1270	.049	1.60	0.076	~20
	ee, $\frac{39 \times 22}{2} = 429$	× 70	14.0	2145				
	ff, $\frac{51 \times 16}{2} = 408$	× 70	14.0	2040				
	gg, $\frac{53 \times 15}{2} = 398$	× 70	14.0	1990				
	hh $\frac{69 \times 30}{2} = 1035$	× 70	14.0	5175				
				12,620				
M-4, 190'-203'	ii, $\frac{67 \times 11}{2} = 479$	× 70	14.0	2395,	0.290	2.10	0.330	~10.0
	kk $\frac{67 \times 12}{2} = 522$	× 70	14.0	2610				
				5,005				
M-4, 203-223'	ll $\frac{88 \times 9}{2} = 396$	× 70	14.0	1980	0.043	0.94	0.059	~10.0
	mm $\frac{88 \times 14}{2} = 616$	× 70	14.0	3080				
				5060				


700
700
11,500 N
7100 E
800
800
903
M-4
B06-1
M-6
M-9
M-3
M-5
11,500 E
7100 E
7.25 oz Au(eq)
≤ 5% Fe
7.25 oz Au(eq)
> 5% Fe
< .25 oz Au(eq)
> .10 oz Au(eq)
< .10 oz Au(eq)
> .05 oz Au(eq)
Section No. 2
to overlay D.C.W
vertical cross sections
of June, 1987
1" = 20'
R.W.H. July 1/87

Section No. 2.

July 1/87
R.W.H.

Drill hole interval	Area about drill hole		Width	Tonnage Factor	Tons	Au	Ag	Au(eq)	Fe
M-9, 104-131	a, $\frac{9\times11}{2}$	=50.	×70	17.5	200	0.30	1.9	0.33	3.4.
	a' $\frac{7\times9}{2}$	=32	×70	17.5	128				
	b, $\frac{12\times4}{2}$	=24	×70	17.5	96				
	b' $\frac{22\times4}{2}$	=44	×70	17.5	176				
					600				
M-9, 131'-157'	c $\frac{20\times11}{2}$	=110	×70	14.0	550	0.70	1.29	0.092	8.3
	c' $\frac{20\times13}{2}$	=130	×70	14.0	650				
	d, $\frac{12\times4}{2}$	=24	×70	14.0	120				
	d' $\frac{12\times3}{2}$	=18	×70	14.0	90				
					1410				
M-3, 151'-185'	e $\frac{28\times12}{2}$	=168	×70	17.5	672	Cut to [illegible]		0.70	3.52
	e' $\frac{28\times15}{2}$	=210	×70	17.5	840				
					1512				
M-3, 185'-204'	f, $\frac{19\times7}{2}$	=67	×70	14.0	835	0.147	3.63	0.209	15.13
M-3, 204'-226'	g, $\frac{49\times20}{2}$	=490	×70	14.0	2450				
	g' $\frac{42\times26}{2}$	=546	×70	14.0	2730	0.110	3.26	0.165	32.47
					5,180				
M-6, 148-166	h $\frac{20\times13}{2}$	=130	×70	17.5	520	0.314	10.74	0.497	~7.0

Section No. 2.

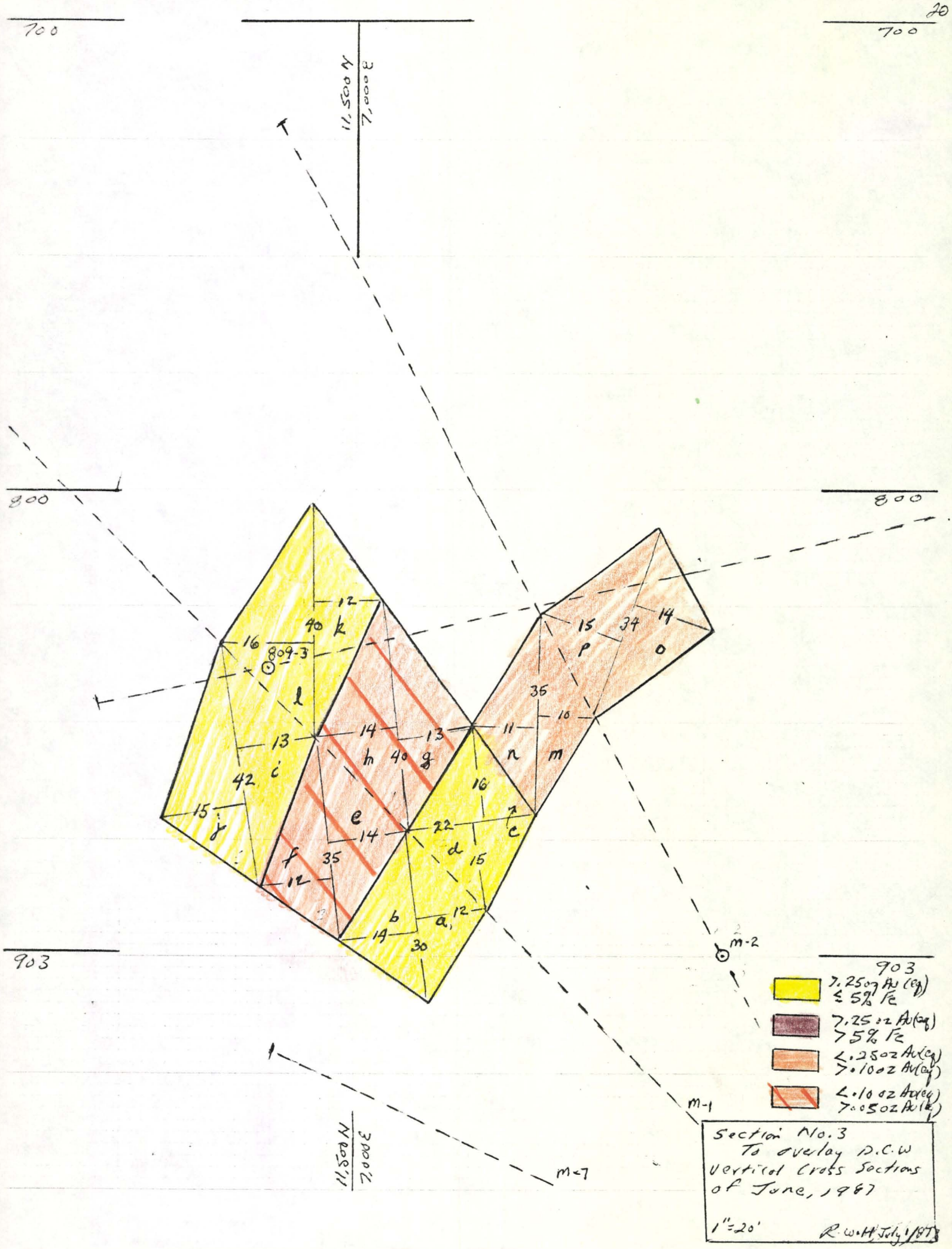
July 1/87
R.W.H.

Drill hole interval	Area about drill hole, width		Tonnage Factor	Tons	Au	Ag	Au(eq)	Fe
M-6, 148'-166'	c; $\frac{22\times8}{2}=88$	x 70	12.5	352	0.314	10.74	0.497	~7.0
	j; $\frac{32\times12}{2}=192$	x 70	12.5	768				
	k $\frac{32\times5}{2}=80$	x 70	12.5	320				
	l $\frac{25\times2}{2}=25$	x 70	12.5	100				
				2060				
M-6, 166'-180'	m $\frac{14\times6}{2}=42$	x 70	11.0	267	0.279	4.12	0.286	~20.0
	n $\frac{24\times6}{2}=72$	x 70	11.0	458				
				725				
M-6, 180'-195'	p $\frac{79\times37}{2}=1462$	x 70	14.0	7310	0.180	4.30	0.253	~25.0
	q $\frac{79\times9}{2}=356$	x 70	14.0	1780				
	r $\frac{69\times20}{2}=690$	x 70	14.0	3450				
				12,540				
M-4, 115-126	s $\frac{18\times8}{2}=72$	x 70	14.0	360	0.20	3.0	0.25	~20.0
	t $\frac{19\times35}{2}=333$	x 70	14.0	1665				
				2,025				
M-4, 126-190	u $\frac{94\times24}{2}=1128$	x 70	14.0	5640	.049	1.60	0.076	~20.0
	v $\frac{94\times30}{2}=1410$	x 70	14.0	7050				
	w $\frac{81\times13}{2}=527$	x 70	14.0	2635				
				15,325				

Section No. 2.

July 1/87
R. W. H.

Drill hole interval	Area about drill hole	Width	Tonnage Factor	Tons	Au	Ag	Au(eq)	Fe
M-4, 190'-203'	x, $\frac{86 \times 13}{2} = 559$	x 70	14.0	2795	0.29	2.1	0.33	~10
	y, $\frac{86 \times 13}{2} = 559$	x 70	14.0	2795				
				5,590				
M-4, 203'-223	z $\frac{84 \times 8}{2} = 336$	x 70	14.0	1680	0.043	0.94	0.059	~10
	aa $\frac{84 \times 11}{2} = 462$	x 70	14.0	2310				
				3,990				


700
700
11,500 N
7,000 E
800
800
903
903
809-3
m-2
m-1
m-7
11,500 N
7,000 E
7.25 oz Au (eq)
≤ 5% Fe
7.25 oz Au (eq)
> 5% Fe
< .25 oz Au (eq)
> .10 oz Au (eq)
< .10 oz Au (eq)
> .05 oz Au (eq)
Section No. 3
To overlay D.C.W
Vertical Cross Sections
of June, 1987
1" = 20'
R.W.H. July 1/87

Section No. 3.

July 1/67
R.W.H

Drill hole interval	Area about drill hole, Width		Tonnage Factor	Tons	Au	Ag	Au(eq)	Fe
M-1, 120'-138'	a, $\frac{30\times12}{2}=180$	x 70	17.5	720	0.235	1.52	0.261	9.21
	b, $\frac{30\times14}{2}=210$	x 70	17.5	840				
	c, $\frac{22\times16}{2}=176$	x 70	17.5	704				
	d, $\frac{22\times15}{2}=165$	x 70	17.5	660				
				2,924				
M-1, 138'-157'	e, $\frac{35\times14}{2}=245$	x 70	14.0	1225	0.054	0.69	0.066	1.89
	f, $\frac{35\times12}{2}=210$	x 70	14.0	1050				
	g, $\frac{40\times13}{2}=260$	x 70	14.0	1300				
	h, $\frac{40\times14}{2}=280$	x 70	14.0	1400				
				4,975				
M-1, 157'-176'	i, $\frac{42\times13}{2}=273$	x 70	17.5	1092	0.226	1.56	0.253	2.11
	j $\frac{42\times15}{2}=315$	x 70	17.5	1260				
	k $\frac{40\times12}{2}=240$	x 70	17.5	960				
	l $\frac{40\times16}{2}=320$	x 70	17.5	1280				
				4592				
M-2, 124'-136'	m $\frac{35\times10}{2}=175$	x 70	14.0	875	0.16	1.5	0.19	~2.0
	n $\frac{35\times11}{2}=193$	x 70	14.0	965				
	o $\frac{34\times14}{2}=238$	x 70	14.0	1190				
	p $\frac{34\times15}{2}=255$	x 70	14.0	1275				
				4,305				

To: Anthony F. Budge

From: Carole A. O'Brien

Date: July 10, 1987

We finished hole 809-5 this afternoon at 195 ft. The diorite contact was at 190 ft., giving us a good 50-55 ft. of chert which should carry some values.

Hole 809-6 spotted at +23° bearing about 218°, or 7° spread from 809-4 towards 809-1. This should intercept the high grade zone about 40 ft. away to the southeast.

The following map, reduced 78% from a scale of 1"=40', shows the drilling from the 809 drill station on the 700 level plan. The "x" on each drill hole indicates where the hole penetrated the 700 level. We managed to miss the one drift by only a matter of tens of feet.

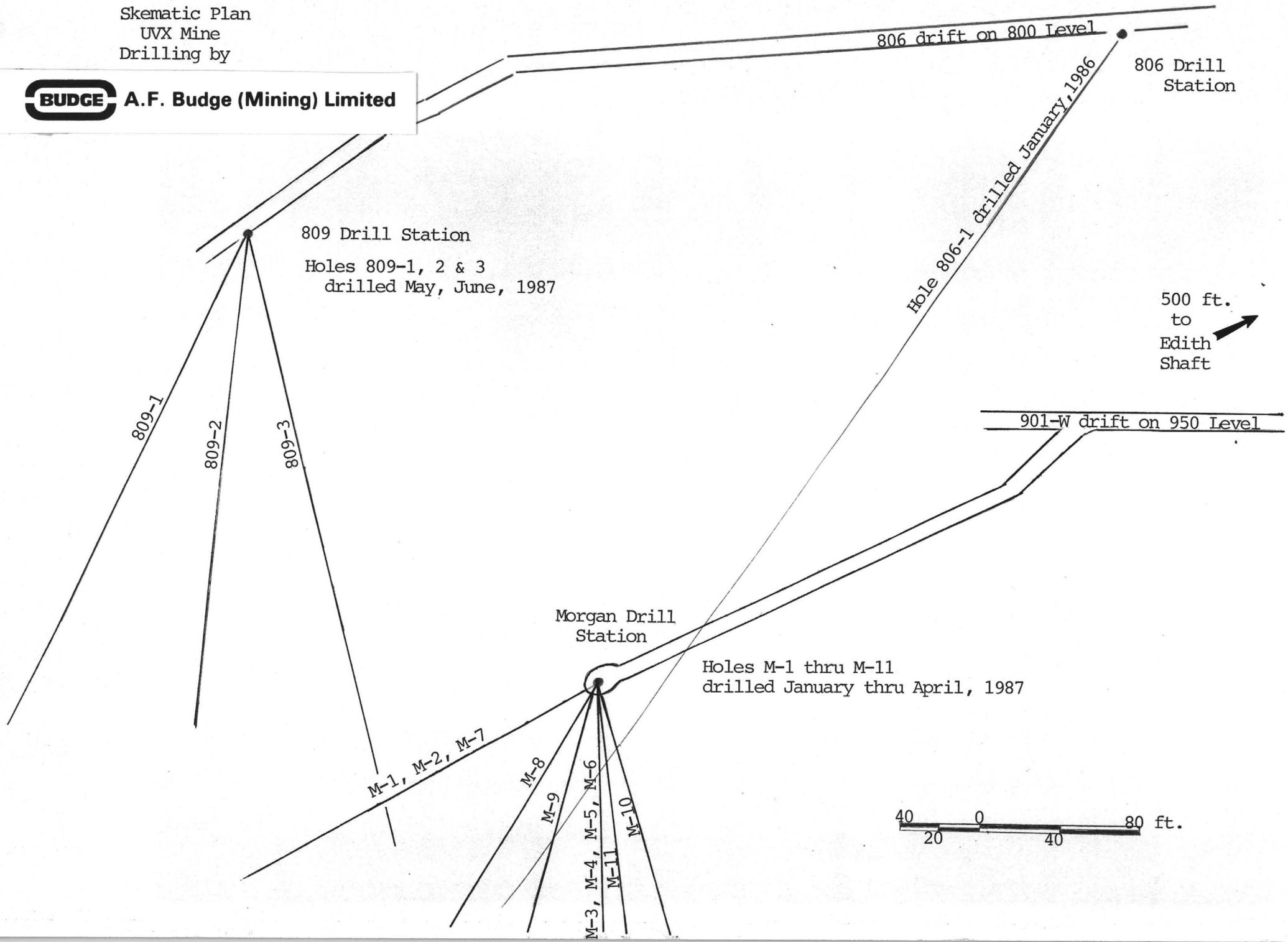
In weight averaging hole 809-4, and not discounting the high intervals, we have from 182 to 369 ft. of chert, or 187 feet averaging 0.181 oz/t gold and 2.30 oz/t silver. Discounting the 2-ounce material, we still get an average of about 0.12 oz/t.

Taking a 35 ft. average width, we could have another 40,000 to 50,000 tons in this target, averaging probably better than 0.20 oz/t.

Coincidently, it seems our third hole in each of our targets seem to get the goodies. M-3 from the Morgan station; 809-4 from the 809 station. The 809-3 hole was designed primarily to confirm upward extent of M-1 hole, so I discounted that one as third hole in the 809 target area.

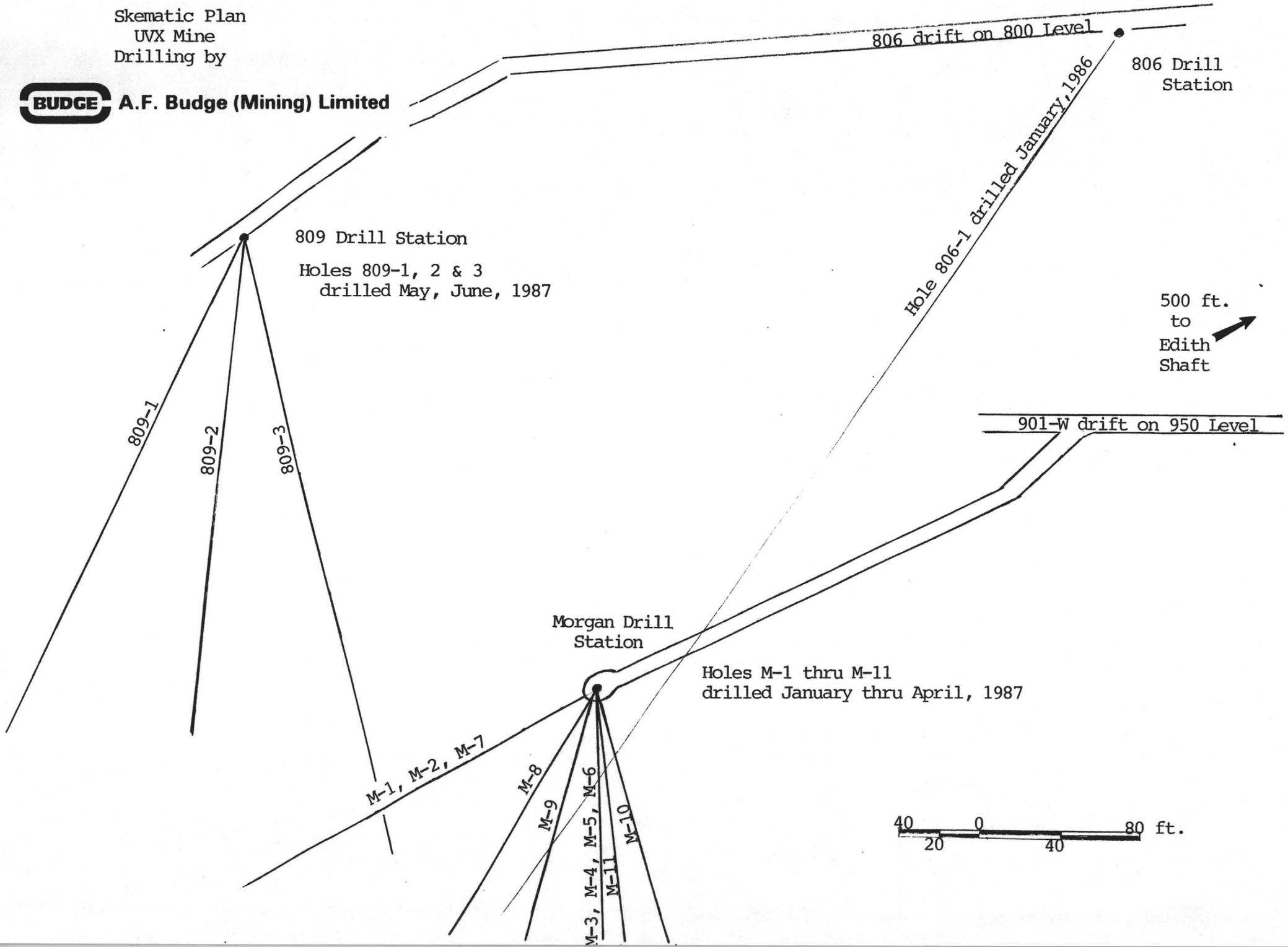
Skematic Plan
UVX Mine
Drilling by

A.F. Budge (Mining) Limited



Skematic Plan
UVX Mine
Drilling by

A.F. Budge (Mining) Limited



Carole

809 D.D.S.* DRILLHOLE SUMMARY

D.D.H.	Orientation at collar		Length of Hole	Chert Intercepts	Angle of Intercept to Bedding	Remarks
	Azimuth	Inclination				
809-1	205° (S25°W)	+23°	336	59-74 179-245 304-336	45°	
809-2	185° (S5°W)	+23°	240	39-48 102-216	45°	
809-3	170° (S10°E)	-5° (-7° at 280')	370	49-97 105-152 279-370	35°	
809-4	225° (S45°W)	+23°	Still drilling		40°	
809-5	185° (S5°W)	+12°	Last 809 D.H. planned			

* 809 D.D.S. location; U.V.X. Mine - 800 level
Mine grid 11,790N
6,905E
4,330 Elev.

Compiled by Don White
June, 1987

Carole

809 D.D.S. DRILLING/ASSAY SUMMARY

D.D.H.	Initial inclination of hole	Ratio of true thickness to drill intercept	High grade intercepts: Drill intercept (feet)	High grade intercepts: True thickness (feet)	High grade intercepts: Grade (oz/t) Au	High grade intercepts: Grade (oz/t) Ag	Low grade intercepts: Drill intercept (feet)	Low grade intercepts: True thickness (feet)	Low grade intercepts: Grade (oz/t) Au	Low grade intercepts: Grade (oz/t) Ag
809-1	+23°	.70	200-214	10	.22	0.8	187-234	33	.15	1.4
809-2	+23°	.70	176-194	13	.44	1.5	156-209	37	.21	1.4
809-3	-5°	.57	55-68 326-343	7 10	.21 .21	0.4 1.2	50-68 287-343	10 32	.17 .15	0.4 1.0
809-4	+23°	.64	Still drilling							
809-5	+12°		Last 809 DH planned							

Compiled by Don White
June, 1987

TABLE 1

August 2, 1985

To accompany memo by DCW & RWH
Estimted size and grade of 4 areas
United Verde Extension Gold Project

	L	W	H	Vol Ft^3,K	Tonnage Factor	Tons K	Grade Oz/t	Oz Au K	REMARKS on further target definition
1. Florencia Area									
Best Case	250	20	500	2,500	11	227	0.25	57.0	Can be drilled from PD drill station on 1100 level, 3 holes, 1,810'
Worst Case	100	5	150	75	14	5.3	0.10	0.5	
DCW-RWH preferred	150	12	300	540	12	OK. 45	0.15	6.7	
2. 1205 "vein" system area									
Best Case	700	25	400	7,000	11	636	0.20	127.2	Above 3 holes will also intersect 1205, add 3 holes on 950 level, 860' 3 holes on 800 level, 440'
Worst Case	300	10	200	600	14	43	0.10	4.3	
DCW-RWH preferred	500	15	350	2,600	12	not confimed 219 maybe	0.12	26.2	
3. Gold Stope									
Best Case						20	0.5	10.0	No drilling on Gold Stope per se. Above holes into 1250 will check for plunge and lateral extensions
Worst Case	Not recoverable					0	0	0	
DCW-RWH preferred						20	0.3	6.0	
4. Verde Fault area									
Best Case	800	30	500	12,000	11	1,090	0.20	218.0	Three holes from surface for 2400' total
Worst Case	400	10	300	1,200	14	86	0.10	9.0	
DCW-RWH preferred	500	20	350	3,500	12	292	0.12	35.0	
TOTALS									
Best Case						1,973	0.21	414.3	Total drill footage 5510'
Worst Case						134	0.10	13.4	
DCW-RWH						576	0.13	75.0	
Paul A. Handverger						1,000	0.25	250	

Use Au/Ag of 1/5

ie: 0.13 Au to 0.65 Ag

To: A.F. Budge

From: Carole A. O'Brien

Subject: Estimated Costs to July 31, 1987; UVX Project
(to point where we can hoist ore/waste)

We have sufficient quantities of rail, rock bolts and timber. We have purchased metal liners from UNC, which can be used in raises to the M-3 area.

Our overall costs including payroll and administration, supplies, etc., have, for the past two months averaged about $57,000.

For the next three months: ($57,000 x 3)	$ 171,000
Drilling from the 809 DDS. (including assays)	$ 37,000
	$ 208,000
Modifications to headframe, and surface plant (H. King's 6-86 estimate of $124,000 + 20%)	$ 150,000
Total	$ 358,000

HO sq. sets.

If we could go in and mine a 20x20x20 ft. section around hole M-3, and assuming tonnage factor of 15 cu.ft./t, we could ship about 500 tons to the smelter (bagged if necessary).

Assuming a grade of 0.75 oz/t gold and 15.0 oz/t silver for our 500 tons, with credits for silica, we could "net" the following:

		+ $15 (silica credit)
1 t.x .75 x .85 x $450 - $100 (mining?)		- $15 (rail)
	= $187 x 500 =	$ 93,430
1 t. x 15 x .85 x $8	= $102 x 500 =	$ 51,000
		$144,430

DMEA Ltd.
Mineral Exploration Advice

Ben F. Dickerson III
Registered & Certified Geologist
Carole A. O'Brien
Certified Geologist

7340 E. Shoeman Lane
Suite 111 "B" (E)
Scottsdale, AZ 85251-3335
(602) 945-4630
Telex: 75-1739

April 22, 1987

To: Anthony F. Budge

Subject: Re-evaluation of Potential Reserves in Verde Area

Geologically, it makes more sense to align our zones intercepted in the drilling from the Morgan Drill Station with the chert contact. The stratiform nature is, I believe, apparent from information provided in memos from Don White and Bob Hodder.

Contouring in this manner certainly correlates well with the trends apparent from the Gold Stope.

In analysing the intercepts on each of the three sections, we have:

	oz/t gold	oz/t silver	Average width
M-3: 146' - 204': 58' (41 t.w.)	0.571	20.53	
M-6: 148' - 195': 47' (33 t.w.)	0.257	6.67	29 ft.
M-4: 107' - 130': 23' (13 t.w.)	0.142	3.42	
M-1: 122' - 176': 54' (46 t.w.)	0.168	1.24	29 ft.
M-2: 124' - 136': 12' (12 t.w.)	0.162	1.53	
M-8: 90' - 120': 30' (26 t.w.)	0.112	1.09	26 ft.
M-9: 104 - 150': 46' (36 t.w)	0.211	1.62	
M-11: 168 - 210: 42' (29 t.w)	0.265	7.28	

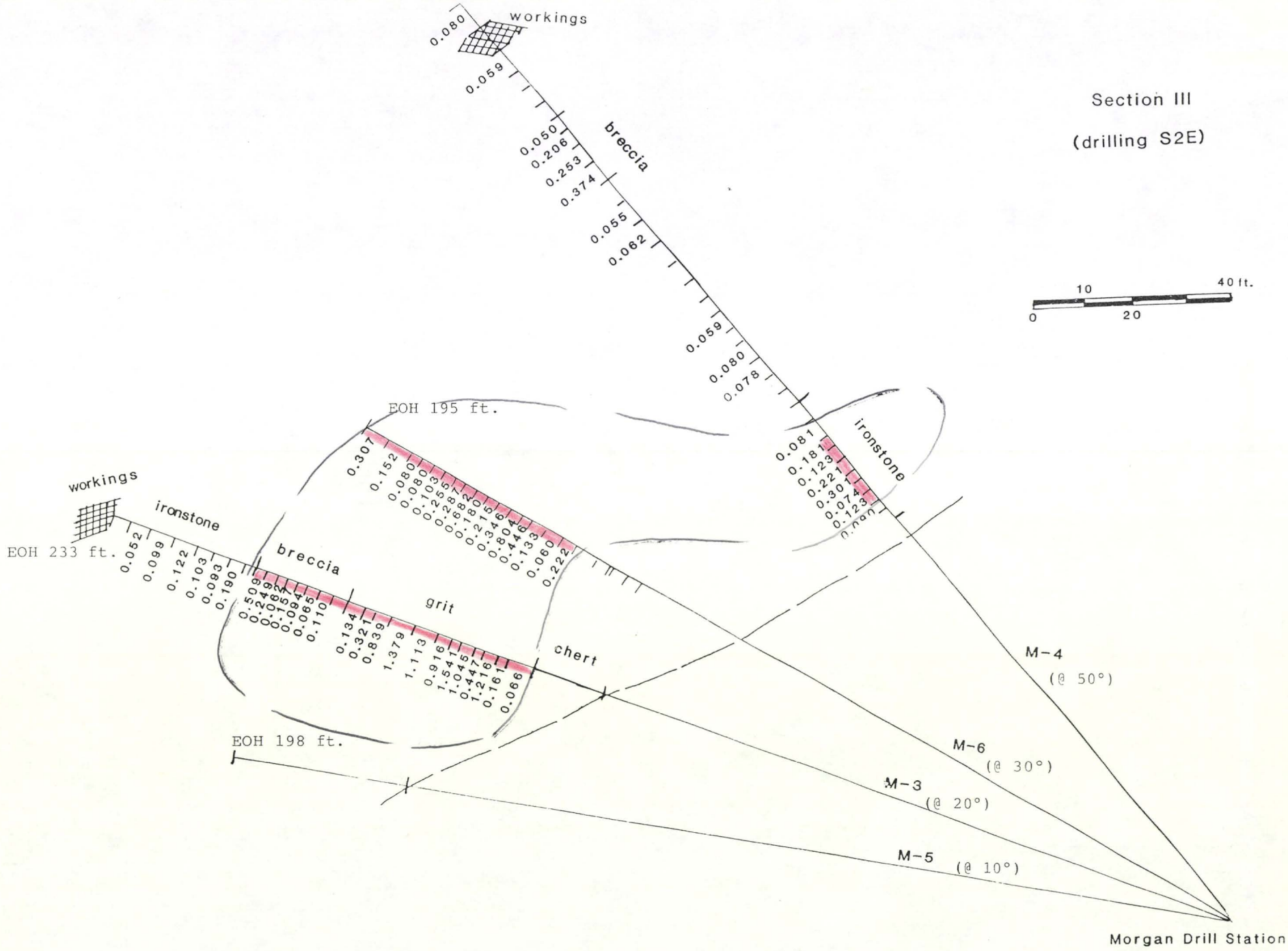
I don't believe this is a coincidence.

Using the planimeter on my 1"=20' sections, I have calculated tonnages on the various sections as follows:

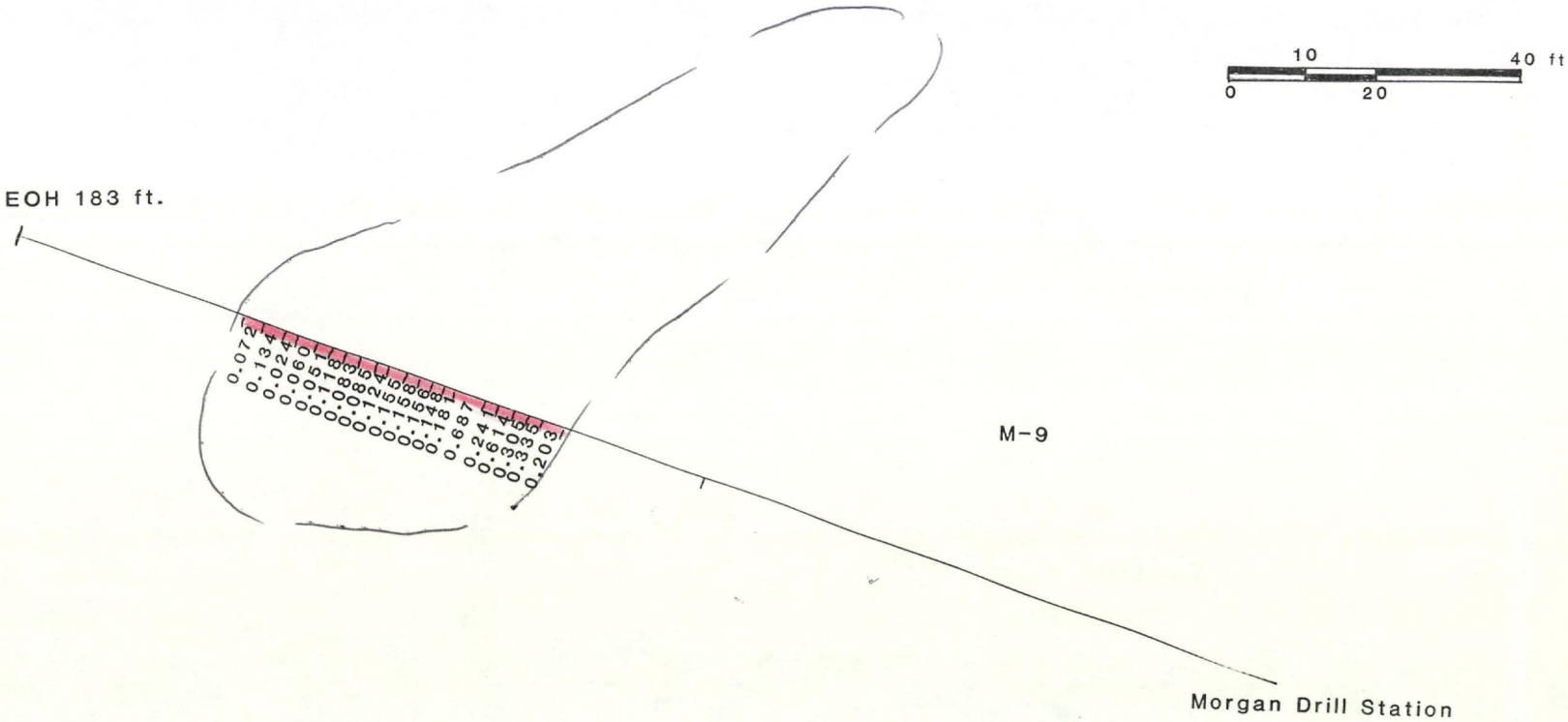
Section III, holes M-3,6 & 4	500 tons/ft.
Section V, holes M-1 & 2	250 tons/ft.
Section IV (average of above)	375 tons/ft.

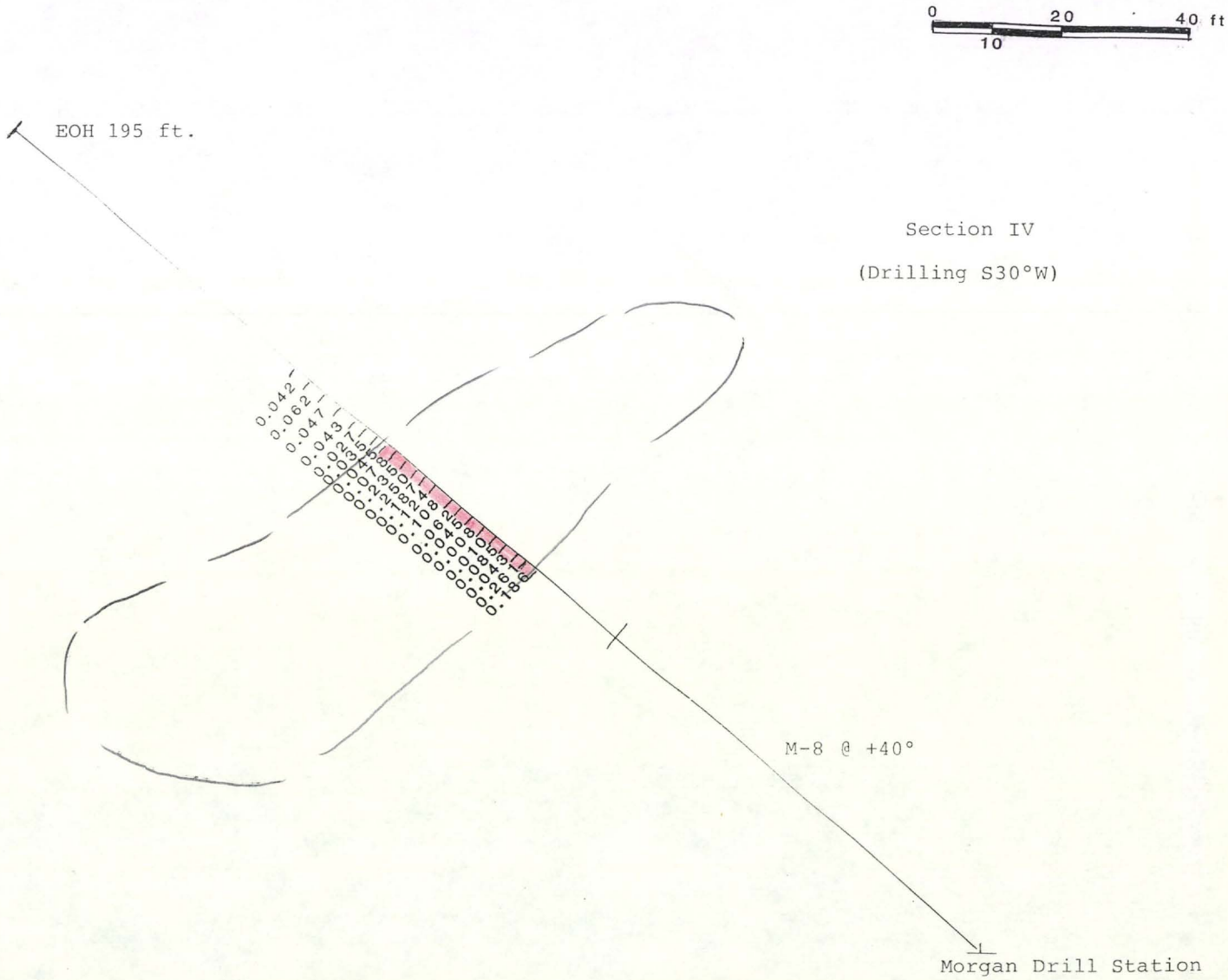
236

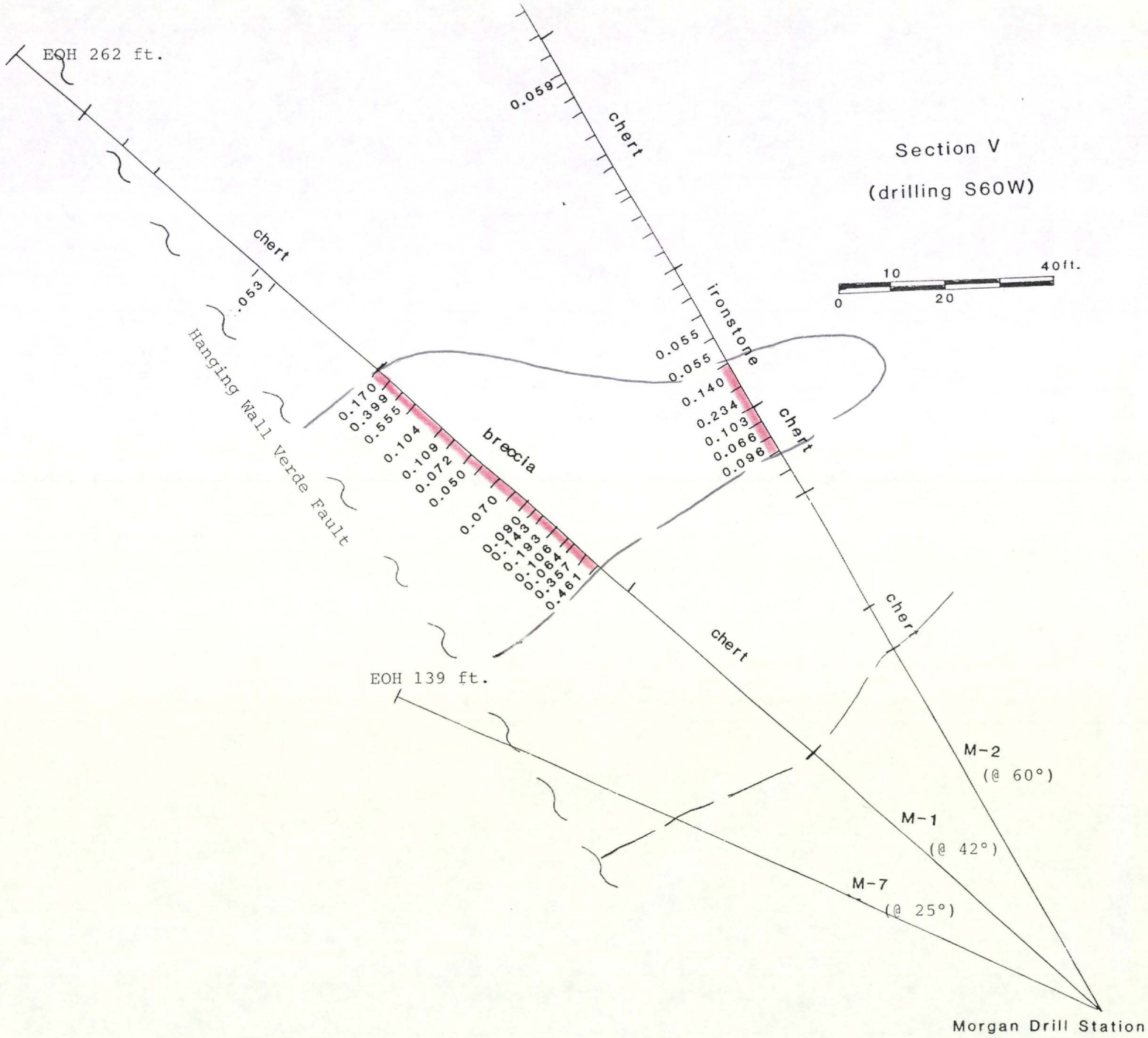
Assuming a 60 ft. strike length for each Section, the total comes out to 67,500 tons! Using a weighted average of the above 6 holes, we have 0.271 oz/t gold and 6.93 oz/t silver. Being conservative, and using a 10:1 silver:gold ratio, our potential reserves become 67,500 tons containing 18,000 ounces gold and 180,000 ounces silver!


Section III
(drilling S2E)
0 10 20 40 ft.
workings
0.080
0.059
0.050
0.206
0.253
0.374
0.055
0.062
0.059
0.080
0.078
breccia
ironstone
0.081
0.181
0.123
0.221
0.301
0.074
0.123
EOH 195 ft.
0.307
0.152
0.080
0.080
0.103
0.256
0.287
0.180
0.215
0.346
0.804
0.446
0.133
0.060
0.222
workings
ironstone
EOH 233 ft.
0.052
0.099
0.122
0.103
0.093
0.190
breccia
grit
0.509
0.249
0.067
0.155
0.094
0.065
0.110
0.134
0.321
0.839
1.379
1.113
0.916
1.541
1.045
0.447
1.216
0.161
0.066
chert
EOH 198 ft.
M-4
(@ 50°)
M-6
(@ 30°)
M-3
(@ 20°)
M-5
(@ 10°)
Morgan Drill Station

Intermediate Section



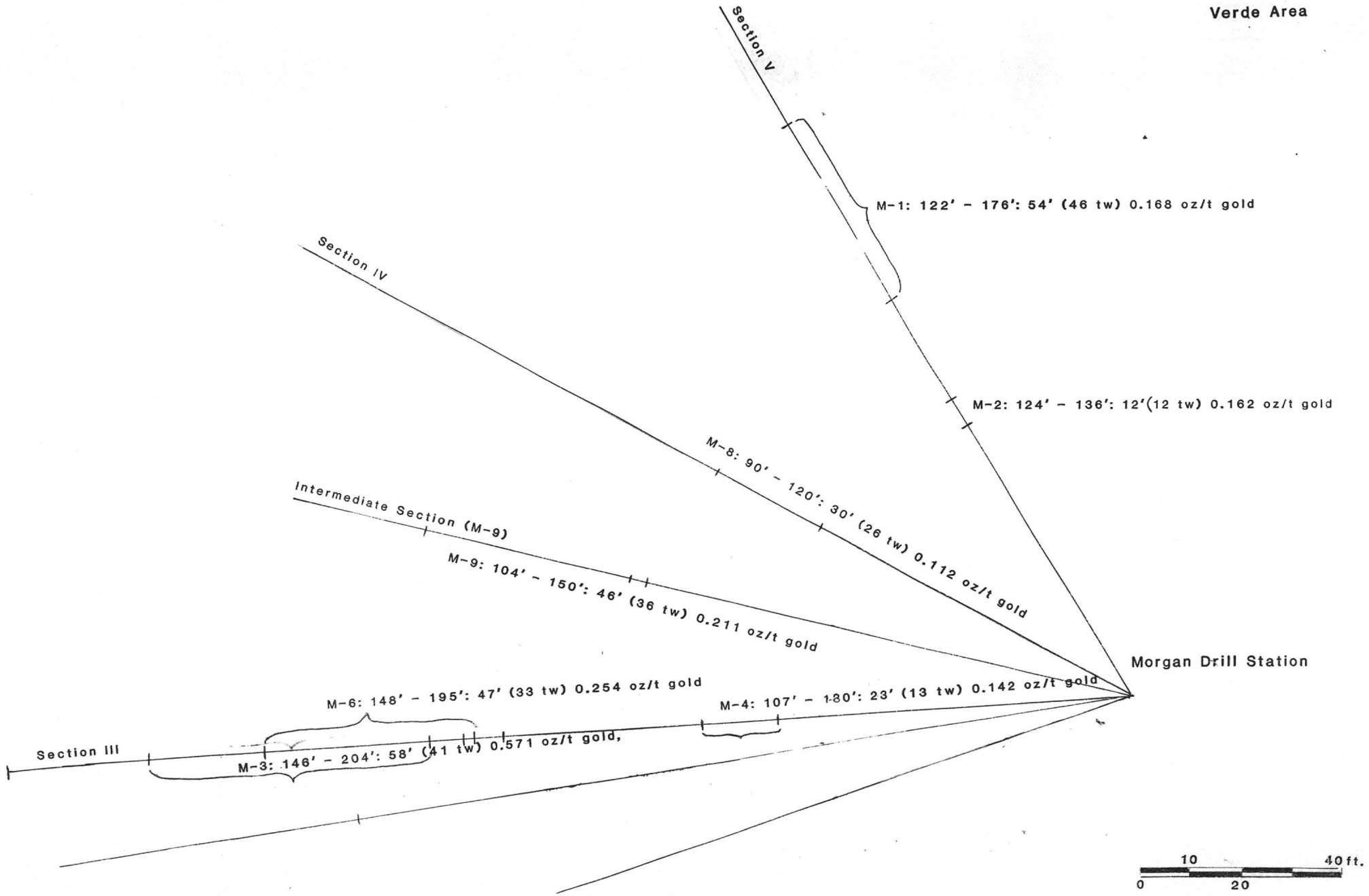

0
20
40 ft
10
EOH 195 ft.
Section IV
(Drilling S30°W)
0.042
0.062
0.047
0.043
M-8 @ +40°
Morgan Drill Station


Section V
(drilling S60W)
0 10 20 40ft.
EOH 262 ft.
chert
.053
Hanging Wall Verde Fault
0.170
0.399
0.555
0.104
0.109
0.072
0.050
breccia
0.070
0.090
0.143
0.193
0.106
0.064
0.357
0.461
0.059
chert
ironstone
0.055
0.055
0.140
0.234
0.103
0.066
0.096
chert
chert
chert
EOH 139 ft.
M-2
(@ 60°)
M-1
(@ 42°)
M-7
(@ 25°)
Morgan Drill Station

Plan

of the

Verde Area



Hypothetical CASE

50 000 TONS @ 0.25 Au 2.5 Ag

$450/oz Au $8/oz Ag

85% return on precious metal values

silica credit equals transportation

15% net smelter return to Verde

Mining cost $65/TON

Cut-off grade

net precious metal value must equal $65/TON

$$\$65 = (.85)(.85)\left[\$450\ Au + \$8\ Ag\right]$$

Assume: Au:Ag :: 1:10 or 10 Au = Ag

$$\$65 = (.85)(.85)\left[\$450\ Au + (\$8)(10)\ Au\right]$$

$$\$65 = 0.723\ Au\left[\$450 + \$80\right]$$

$$\$65 = (0.723)(\$530)\ Au$$

$$Au = \frac{\$65}{(0.723)(\$530)}$$

$$\underline{\underline{Au = 0.17\ OPT}}$$

GROSS REVENUE FROM MINING

$$(50\ 000\ TONS)(85\%)\left[(\$450)(0.25) + (\$8)(2.5)\right]$$

$$= \$5{,}630\ k$$

VERDE Royalty

$$\$5{,}630k \times 15\% = \$845\ k$$

Hypothetical CASE CONT.

MINING Cost

50,000 x $65 = $ 3,250 K

Summary $ = 1000

Gross REVENUE	$ 5,630
- VERDE Royalty	845
NET REVENUE	4,785
- MINING Cost	3,250
Operating PROFIT	1,535
- Cost TO DATE	1,300
- 6 months	700
Loss	($465)

Comments & NOTES ON DCW & RWH MEMO OF 5/15

In calculating a high grade, low-iron material reserve, each hole was given equal weight in averaging thickness and grade. Within the scope of their estimation, this is appropriate, but it overly discounts the findings in M-3 and includes hole M-8, which is below cut-off grade. Following is a re-calculation of this reserve with these changes. (1) use M-3 grades, but discount by ½ the thickness of the zone. (2) Exclude hole M-8 and decrease tonnage proportionally

Drill Hole	Thickness	Au	Ag
M-6	8	0.43	8.0
M-9	21	0.30	1.9
M-11	13	0.22	7.5
M-4	6	0.18	3.3
	7	0.29	2.1
M-1	14	0.24	1.5
	16	0.23	1.6
M-3	24	0.88	32.5
Avg.	12	0.34	4.9

Comments continued

TONS

13,600 sq. FT. DCW + RWH

based on 7 holes - eliminated M-8

$13\,600 \times \frac{6}{7} = 11\,600$ sq. FT.

Avg thickness 12

TONNAGE FACTOR 15 FT^3/TON

$(11\,600 \times 12) \div 15 = 9{,}300$ TONS

RECALCULATED RESERVE

9,300 TONS @ 0.34 Au 4.9 Ag

NET PER TON $450 Au + $8 Ag

$.723\,[(\$450 \times 0.34) + (\$8 \times 4.9)] = \$139$

$9300 \times \$139 = \$1{,}300{,}000$

		NET
Mining Cost	$9300 \times \$65 = \$600{,}000$	$700,000
	$9300 \times \$80 = \$750{,}000$	$550,000
	$9300 \times \$100 = \$930{,}000$	$370,000

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

June 16, 1987

Tim Brand
Facilities Planning and Development Mgr.
Arizona State Parks
800 West Washington, Suite 415
Phoenix, AZ 85007

Dear Tim,

We met over two months ago when you attended a public review session regarding the U.V.X. Mine Road improvements in Jerome. I am the geologist involved with the ongoing mineral exploration there, on behalf of A.F. Budge (Mining) Ltd., lessee from Verde Exploration, Ltd.

Neither my client nor the lessor has heard anything more from you or the D.O.T. regarding easements or road design criteria. We trust that does not mean we're being left out of the planning!

The attached memo from April 1, 1987 summarizes our concerns and wishes. I hope you will review it with the D.O.T. personnel involved and approach us with respect to the easement, turning radii, and load bearing issues.

I wish to pass on another observation. It relates to the parking problem and the very rationale for the road improvements. Right now the state park parking for buses, campers, and trailers is limited to our mine yard area on a "permissive use" agreement. That area is increasingly being used by our own employees, now numbering about eight cars per shift. If our exploration is as successful as is expected, we will have more personnel using that area and the already tight parking will have no space remaining for tourists with oversize units. On popular days even now I often witness traffic snarls in that lot when campers and buses and normal cars clash. The obvious questions is "why upgrade the access road for buses and trailers if there's no place for them to go?"

May I suggest that you deal seriously with Paul Handverger of Verde Exploration for acquisition of parking area east of the museum, away from our mine area, before the road improvements and before we grow to need all the parking west of the museum.

I trust we will be hearing from you.

Sincerely,

Don White

Don White
Geologist, C.P.G.

DW:sk
cc: Carole A. O'Brien, A.F. Budge (Mining) Ltd.
David J. Mellgren, AZ DOT
Paul A. Handverger, Verde Explor., Ltd.

M E M O

TO: A.F. Budge, C.A. O'Brien cc: P.A. Handverger

FROM: Don White

DATE: April 1, 1987

SUBJECT: Road improvement plans for State Park access at the U.V.X.

By chance I learned of and was able to attend a public meeting yesterday (March 31, 1987) for "design review" of road improvement plans in and around the U.V.X. It was fortuitous that I attended for the plans have much impact upon Verde's property, Budge's lease, our future operational plans, and, in reverse, our plans should affect their road design.

The Arizona State Parks and Dept. of Transportation teamed up with plans to improve access to the Jerome State Historic Park (e.g., Douglas mansion museum) by widening and straightening the access road to "better handle big campers, trailers, and buses." They contracted Coen Engineering to draw up the attached plans. The plans call for right-of-way acquisitions that would cut into our leased and already limited surface working area. Note on sheet number 18 that the new "R/W Esmt." cuts considerably into the engineering office (our present core storage and work spaces) to the north and the old Edith hoist foundation area to the south. The engineering office was, in their words "to be relocated."

At the informal review session which included a walk along the road, I pointed out the impracticality of relocating the engineering office to which they readily agreed. I also pointed out the importance to us of work space adjacent to the Edith shaft (which can't be moved!). We discussed our present limits to N and W by existing road, to S by hoist equipment and the need to retain vehicle access to the shaft from the east. That leaves a very small area just N of the Edith shaft (where the old Edith hoist foundation is) for shaft-proximity ore handling equipment (e.g., bins, loadouts, surge piles, conveyors, etc.). That is the same area that would be all the more infringed upon by shifting the new, wider road further S to avoid demolition of the engineering office. Possible alternatives include any combination of a) narrowing the road, b) extending the curve to the W by cutting into the hill and shift the Bell family's access road W as well, and c) building retaining walls to minimize the encroachment toward the Edith.

Other topics of discussion I brought up included our need for continued access, likelihood of ore haulage, and the very names of the roads being discussed. They had envisioned construction this fall (depending upon right-of-way acquisitions, etc.) including full tearing up of the old road (i.e., closure) with alternate access via the steep, windy, rough road from town via the Little Daisy shaft area. Clearly this would prevent timber, rail or other large deliveries. They acknowledged the need to coordinate worker access for shift miners and drillers, etc.

It seems to me several things ought to be done immediately:

1) Coordinate our response with Verde Expl. Ltd. I have phoned Paul Handverger who was not otherwise informed of any of this. My question to him was what right-of-ways presently exist since our lease does not document them. He promised to dig out the appropriate file which apprently includes a 1950's recorded easement for the road only. The present trailer/camper parking area is "permissive use only", meaning it can be withdrawn any time by Verde (Budge as lessee) if so elected (e.g., space needs for surface plant).

2) Decide internally what our needs are with regard to:

   a) Surface plant and storage; will the present trailer parking area be an issue?

   b) Shaft area space plans; will a wider road easement around the Edith be a problem and if so what solutions do we recommend?

   c) What haulage loads do we anticipate? Axle loadings and bed lengths are important to pavement thickness and turning radii.

3) Formally notify the appropriate authorities of our concerns, including:

   a) Road name corrections; the road in questions is the "U.V.X. Mine Road" on all old maps, etc. They have called it the State Park Road, effectively and unwittingly a name change. We should retain the old name. The alternate road up to Jerome is the "Little Daisy Road" I believe, though the Coen Engineering plans have now dubbed <u>it</u> the UVX Mine Road. This too should be corrected.

   b) Our concerns for the engineering office.

   c) Our need of space near the Edith shaft.

   d) Our likely need of space where the trailers presently park.

   e) Our interest in seeing ore haulage accomodated in their design for turning radii, pavement thickness, and entering route 89A at the intersection on the hogback.

   f) The need for continued access to the mine for shift work and coordinating closures for the sake of scheduling large deliveries or shipments.

   g) Our wish to work together with them for a better road for everyone's benefit.

Clearly this is an opportunity to mold their project to everyone's advantage. They want right-of-way enlargements from us. We can't afford space in some areas but may be able to in others. In return we may be able to get a better, safer, haulage road.

Persons involved in the project include:

David J. Mellgren, P.E.; Civil Engineer who directed the design review meeting, March 31, 1987.

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Roadside Development Services
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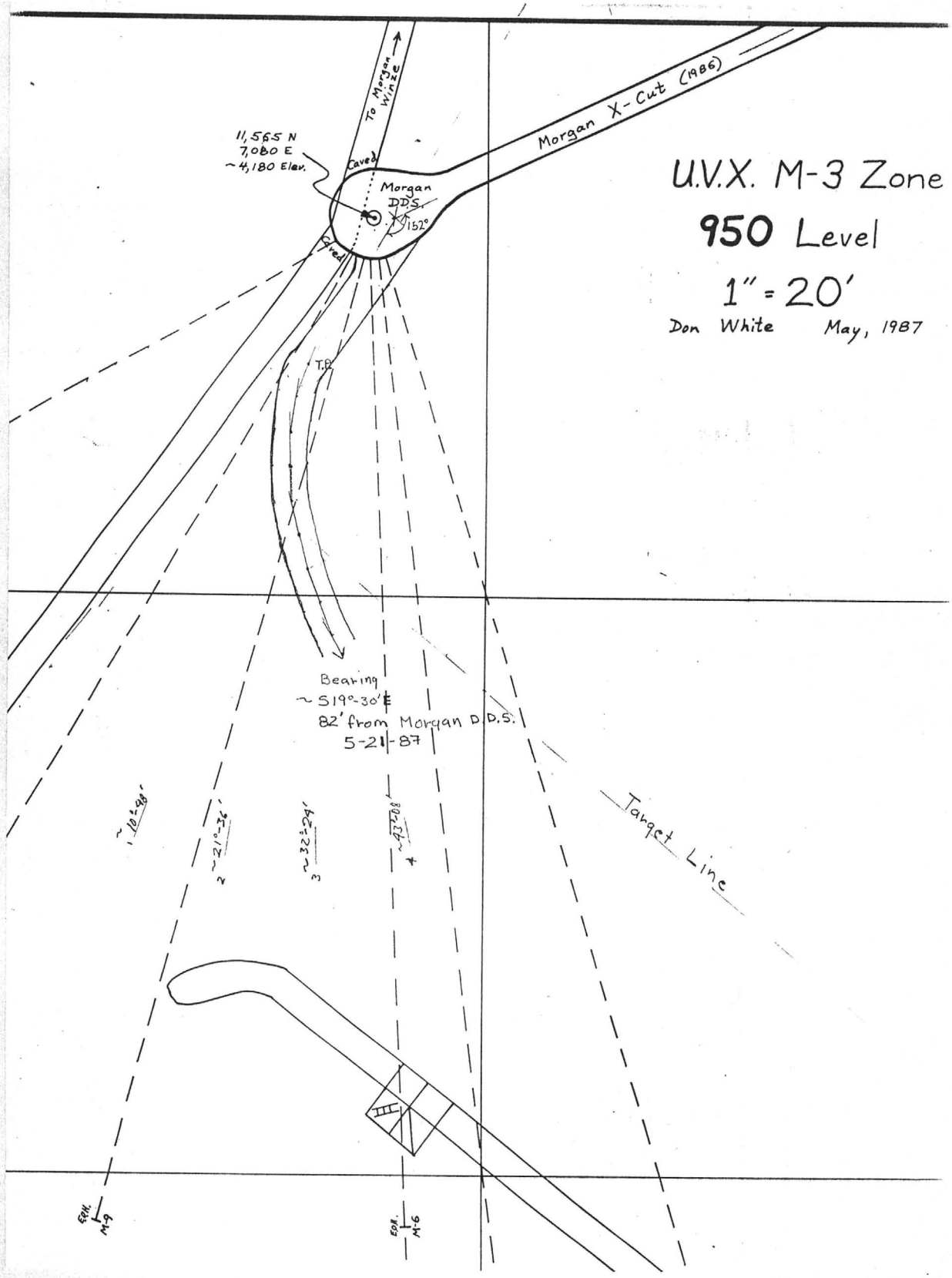
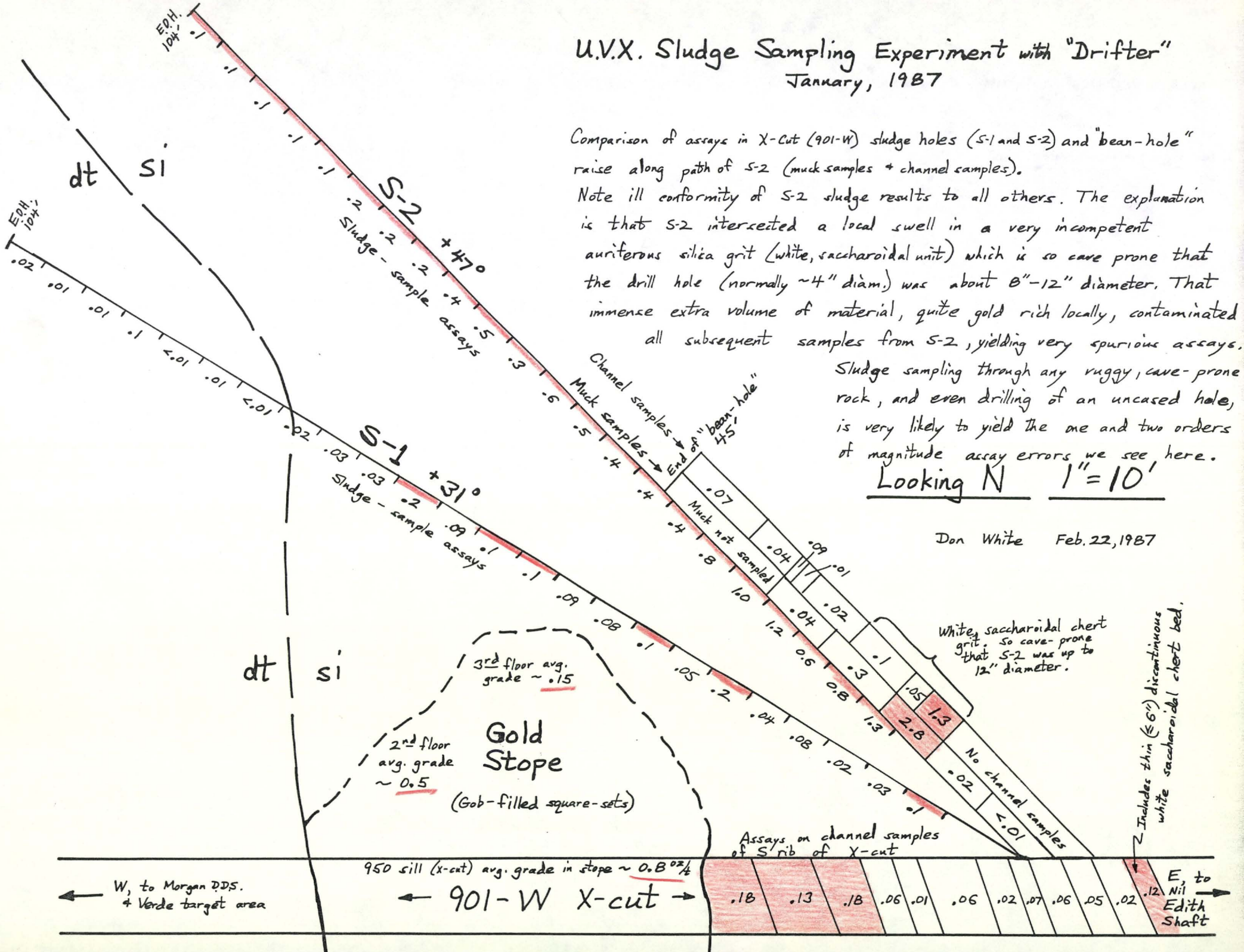

U.V.X. M-3 Zone
950 Level
1" = 20'
Don White May, 1987
Morgan X-Cut (1986)
To Morgan Winze
11,565 N
7,080 E
~4,180 Elev.
Caved
Morgan DDS
152°
Caved
T.P.
Bearing
~S19°-30'E
82' from Morgan D.D.S.
5-21-87
~10°-48'
~21°-36'
~32°-24'
~43°-08'
Target Line
EOR. M-9
EOR. M-6

U.V.X. Sludge Sampling Experiment with "Drifter"
January, 1987

Comparison of assays in X-Cut (901-W) sludge holes (S-1 and S-2) and "bean-hole" raise along path of S-2 (muck samples + channel samples).
Note ill conformity of S-2 sludge results to all others. The explanation is that S-2 intersected a local swell in a very incompetent auriferous silica grit (white, saccharoidal unit) which is so cave prone that the drill hole (normally ~4" diam.) was about 8"–12" diameter. That immense extra volume of material, quite gold rich locally, contaminated all subsequent samples from S-2, yielding very spurious assays.
Sludge sampling through any ruggy, cave-prone rock, and even drilling of an uncased hole, is very likely to yield the one and two orders of magnitude assay errors we see here.



Hole No.	From	To	Width (ft)	Gold oz/t	Silver oz/t	Value @ $350 gold $6 silver	With	(ft)	From	To	Gold oz/t	Silver oz/t	Value @ $350 gold $6 silver
UVX-1 (P-D)	165	260	95	0.072	0.59	$28.74		20	240	260	0.196	1.54	$77.84
UVX-2 (P-D) 1983	170	303	133	0.073	0.25	$27.05		35	268	303	0.177	0.39	$64.29
	482	516	34	0.063	2.14	$34.89							
	615	647	32	0.093	0.52	$35.67							
1104-1 (Budge)	193	285	92	0.055	0.43	$21.83		15	240	255	0.112	0.53	$42.38
1104-2 (Budge) 1985	209	252	43	0.082	0.49	$31.64		14	238	252	0.144	0.38	$52.68
	326	334	8	0.065	0.83	$27.73							
	572	587	15	0.042	1.26	$22.26							
	598	610	12	0.091	0.77	$36.47							
1104-3 (Budge)	227	276	49	0.087	0.30	$32.25		9	227	236	0.143	0.32	$51.97
901-1	332	358	26	0.058	1.39	$28.64		6	335	341	0.145	0.65	$54.65
901-3	300	326	26	0.081	2.08	$40.82		7	314	321	0.183	3.13	$82.81
806-1 (Budge) 1986	504	578	74	0.102	1.28	$43.38		13 10	514 568	527 578	0.236 0.177	2.24 0.88	$96.04 $67.23

	Width (ft)	Gold oz/t	Silver oz/t			Width (ft)	Gold oz/t	Silver oz/t	
Weighted average of 10 zones; widths over 20 ft.	51.2	0.078	0.77	$32.07	Weighted average of 9 zones	14.3	0.171	0.96	$65.71

M E M O

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

FROM: Don White

DATE: March 17, 1987

SUBJECT: U.V.X. gold project results; their significance to us and the geologic community, and some recommendations.

The last year has seen an immense degree of progress on our U.V.X. gold project, proving our concepts from two years ago, finding gold and silver, and correcting some long-held misconceptions of the U.V.X. geology. In short, we are revolutionizing the geologic understanding of the U.V.X. and surrounding area at the same time as we are accomplishing our primary goal of locating economic grade precious metals deposits.

The principal geologic insights resulting from our work are:

1) An understanding of the chemical evolution of the metalliferous system that has yielded the U.V.X. stratabound and segregated sequence of varied ore types. This includes the tri-modal split of massive sulfide ores, silica ores and gold-only ores in sequence from bottom to top. Each is discrete chemically and separated in space and time (stratigraphy). This metal zoning is so profound that one end-member was the U.V.X. bonanza copper deposit with less than 1 ppm gold, and the opposite end-member is up to $1,000 per short ton precious metal ore (as in our DDH-M-3) with only a few parts per million base metals. These several orders of magnitude concentration changes occur over only tens of feet of stratigraphy.

2) Within the gold-only portion of the stratigraphy (e.g., cherts) the economic grades may result from a combination of several sources and modes of concentration, including:

   a) Primary exhalite; there is a clear cutoff of gold and silver values at the chert hanging wall and footwall contacts. Most cherts of the U.V.X. contain at least a few thousandths of an ounce gold per ton.

   b) Hydrothermal replacement; we see clear evidence of certain cherts having been hydrothermally fractured and silica healed. This includes the abundant hairline fractures healed with slightly color-contrasting quartz, and the jig-saw puzzle breccias. In thin-section, we see secondary quartz and replacement of carbonates by iron oxides. The ferruginous secondary quartz is known to carry gold and electrum.

   c) Sedimentary reworking; we have documented the cyclic nature of the doubly-graded chert breccias in the hanging wall of the Gold Stope. There is a precious-metal correlation to these cycles that may reflect sedimentary controls on physically

reworked auriferous cherts with consequent concentrations in the basal member of each cycle. Similarly, the varying porosity of sedimentary breccias may have been the structural/stratigraphic control on later hydrothermal mineralization. Units such as the silica grit of the S-2/bean-hole occurrence above the Gold Stope and the M-3 intercept in the Verde Area are key examples of high-grade to high-porosity correlation.

d) Plutonic remobilization; the U.V.X. diorite seems to lurk nearby to every gold-only occurrence of economic grade. Most of the evidence now indicates that the diorite was plutonic and that it was probably shallowly emplaced as a subvolcanic dome post-"Upper-Sequence" volcanics but still early Proterozoic. It appears to have split what was perhaps the most brittle rock in the section, the chert, and wedged its way along bedding, semi-conformably. In so doing, it dilated the Gold Stope cherts up-section from their originally contiguous Verde area cherts. Indeed, south of the diorite the two chert bodies are still joined. The Gold Stope cherts have a diorite footwall. The Verde area cherts were more completely engulfed by diorite.

The diorite reacted with its wall rock, yielding a naturally fluxed margin that has only recently been recognized as altered diorite rather than volcaniclastics. It may be that the diorite was not alone in suffering changes attendent to the intrusion. The gold and silver within the cherts exhibits a curious ringing effect to the diorite body, spatially removed from the pluton as though concentrated at some thermal gradient. This needs to be more fully studied but holds promise of being a most crucial exploration aid.

e) Metamorphic remobilization; may accomplish more of the same phenomenon attributed to the diorite. It may further concentrate precious metals in tectonically created structural settings such as fold noses and up against porosity barriers of stratigraphic, plutonic, or hydrothermal origin.

f) Supergene mobilization; while not my favored explanation, this can not be ruled out. Certainly we are working in a near-surface setting with almost fully oxidized and locally very porous lithologies. The long exposure to pre-Cambrian weathering and meteoric waters and ongoing effects of hydrologic activity along the always-active Verde fault must be considered.

3) There is some likelihood that the bulk of the U.V.X. ore bodies, both base-metal and precious-metal types, may have been hypogene oxidized. We see various iron facies in near zero permeability cherts, always oxidized. Most revolutionary to old concepts of the U.V.X., if the cherts were hypogene oxidized, why not the massive base metal ore body? That has always been viewed as a supergene-enriched sulfide body. Indeed, it exhibits classic supergene mineralogy (chalcocite, cuprite, bornite grading downward into unoxidized "protore" of

chalcopyrite and pyrite) but the incredible copper grades at the top (1200 thru 1400 levels, often 30% - 50% Cu) require an immense volume of low-grade source rock from which to leach the "supergene" copper. That was always viewed as the UVX "gossan."

Our work has shown that the U.V.X. "gossan" "ain't what it was thought to be." It's chert in the Florencia area. It's chert in the 1205/ Gold Stope area. It's chert in the Verde area. Even on the 1200 level, right over the main ore body, it's chert! That chert is often ferruginous (hematitic and/or goethitic) and often brecciated and sometimes vuggy but nowhere is it "gossan." In fact, petrographic work shows that it never did contain any significant sulfide component!

The supergene enrichment theory of the U.V.X. main ore body thus suffers for a lack of source rock. It certainly was not the chert, there is no significant volume of true gossan on the deposit, and there is no other likely source. One is forced to consider hypogene oxidation. The apparent gradation to protore at depth must then be explained as a submarine facies change from oxidizing to reducing conditions on opposite flanks of the volcanic system or else time-separated, asymmetrically discharging systems with the sulfides likely earlier and the hypogene oxides capped by cherts later. This kind of asymmetry is common in such volcanic terrains.

4) Recognition of the diorite identity and its alteration halo; as mentioned with regard to diorite remobilization of gold, the wall rocks to the Verde area cherts are mostly diorite. This is new. Geologists as far back as Lindgren and Ransom and Fearing in the 1920's have all viewed the rocks there as "schists" and sediments. Up through the present, without benefit of specimens, Paul Lindberg and I have interpreted the "schists" as Grapevine Gulch Fm or equivalent. Indeed, Lindberg's sections in 1984 for CoCa Mines and my own for the U.V.X. project in 1985 propogate this error. Even after drilling through the diorite body from wall to wall (DDH 806-1 in 1986) we carried the schist terminology and thought of the schists as tuffs and ignimbrites. Then, with the opening of the 901-W crosscut in later 1986, and viewing of the contact relationships and gradations of alteration, it became clear that "schist", "red blocky schist", and "sediments" all referred to altered diorite at the footwall of the Gold Stope and most sides of the Verde area.

The diorite intruded the cherts and was naturally fluxed, yielding a sequence of alteration zones (see Hodder and White memo, March 3, 1987). Some alteration is so severe, including clay replacement, bleaching, and obliteration of plutonic minerals and textures that the earlier confusion is understandable. The finding of chilled margins, flow banding, and intrusive breccias against the chert contacts (when drilling from the Morgan D.D.S. to Verde target area) has firmed up our interpretation.

The ramifications of this reinterpretation are many. The wedging and dilation of the cherts by the diorite is now clear. The likelihood of heat and metasomatic fluids from the diorite affecting the

precious metals is all the greater. Remember that the Gold Stope sits in a trough on the east flank of the diorite. Similarly, the M-3 intercept in the Verde area may have been a trough in the west flank of the diorite, now altered in geometry by further motion on the Verde fault.

5) Structural controls on mineralization; the bulls-eye distribution of gold grades in the Gold Stope and the vent or cone shaped high grade zones suggest primary gold deposition around vents. Thus primary structural controls such as sea-floor fissures and hydrothermal channels must have been important. Similarly, structural control of diorite emplacement may have indirectly controlled the concentration of gold in select locations. Certainly any post-folding, metamorphic gold mobilization was subject to structural controls of all sorts, notably the apparent drag folds of diorite into chert on both walls of the pluton.

6) Appreciation of the rapid facies changes that exist within the cherts; the 925 drift, the comparison of the 901-W X-cut to up-dip exposures in the S-2 bean-hole, and the drilling on vertical fences now taking place in the Verde area, all display rapid chert facies changes. Correlations over more than a few tens of feet can be risky. The several feet of white, saccharoidal chert with high grade gold in the S-2 bean-hole does not show up except perhaps as a few inches of the same material only 20 feet down dip in the 901-W X-cut. Many beds can be walked out from beginning to end within 50 feet of the 925 drift. The facies changes between M-1 and M-2 and between M-3 and M-4 are notable. The coming and going of breccias, iron constituents, and sugary textured or gritty units is nearly matched by the apparent erraticness of the gold. Rest assured, however, there are patterns to these changes, and with care they will be recognized, understood, and used to our advantage as our program advances. Already we see even more similarities between the Verde and Gold Stope areas. The up-dip transition to a more hematite-dominated sequence with local "iron-stone" ($\geqslant$ 50% FeO) occurs both on Morgan drill fences 3 and 5 and between the 901 X-cut and up-dip to the D.D.H. 901-3 intercept (near the 903- intermediate level). Fill-in holes such as M-5 and M-6 will help elucidate these changes.

Either way, the meaning of these changes to our gold program is most important. The high-grade pods like that in M-3 must be expected to be pretty small. It's their distal flanks which we are finding in M-1, 2, and 4 with 0.25 oz/t intercepts. Tightly spaced drilling will be required to define reserves.

7) The likelihood of a fault extension; within a week of this writing we should know whether M-5 is still in mineralization when it enters the Verde fault. If it is, as I believe it will be, then a high grade pod should be expected in the fault sliver of chert up near the 800 level on my fence 3 drill section. Indeed, gold-only mineralization is reported in an old working through that faulted body on the 903- intermediate level. This would be a gold-only

equivalent of the base metal "drag ore" mined long ago. Given the small dimension and high unit value of our M-3-like target, a fault extension may be very important.

The combined impact of these things learned and our "find" in M-3 is a series of recommendations:

1) The drilling program from the Morgan and 809 drill stations should remain as flexible as possible. The results of an M-3 mandate straddling holes. We are embarked on that now with M-5 at +10° and M-6 likely at +30° beneath and above M-3. These will test 30 to 40 foot wedges on either side of M-3 in the same vertical plane. Should M-5 be well mineralized, we know to expect a fault extension. Should M-6 be well mineralized, we may need to drill +40°, for grades and lithologies definitely change by M-4 (+50°) and each 10 degree swing is well over a million dollars worth of reserves however far the M-3 grades persist (see memo by C.A. O'Brien, March 11, 1987).

   Straddling the M-3 intercept in a horizontal plane is equally important. A low angle hole (+25°) on fence 4 will help test 70-80 feet along strike to the NNW. A hole further SSE is certainly desireable but is pushing the limits of suitability of our Morgan station for testing so far along strike. The intercept angle will be quite oblique. This is the next issue;

2) A linear array of the M-3 type high grade pods is possible. The Gold Stope data suggests a SSE -20° raking trend of its high-grade "bulls eyes." The mine model reveals a parallel rake of the Verde area chert body. Our drilling planned from the 809 can test the up-rake (NNW) extension of the Verde area to its end against the Paleozoic and Tertiary unconformity near the 600-level.

   The down-rake (SSE) extension needs to be drilled not only to prove up the M-3 intercept but also to continue exploration along the main trend. The mine model and level plans outline large areas of potential in that the host rock (chert) is present and relatively little touched by old workings. There is about 500 feet of strike length of prospectable chert between the M-3 intercept and the 1104 drill fence, at least as much as that from fence 3 through fence 5 to the 809 drilling area.

   If and when production commences from the Verde area, a second access/escape route will be useful or perhaps required. That would most logically be via the 902-W to the 901-S on the 950 level. Thus that route or a new one parallel to it should be opened soon in order to a) drill-test the Verde South area, b) provide a second access route by connecting up with the Morgan area via a drift in chert and, c) testing the S strike extension of the Gold Stope. Such work could be commenced with existing crews as soon as the 809 DDS is excavated and fully serviced.

3) Similar targets outside the U.V.X. should be considered. Most notably, the hanging wall cherts of Phelps Dodge's United Verde are a prime target. P.D. apparently has no inclination to test that themselves since they feel it is "too small." I know it happens to dwarf what we are happy with at the U.V.X.! What's more, it can be explored from the surface by core drilling from the pit. P.D. went so far last year as to grade the ramp into the pit and put in three drill stations ideally suited to the gold zone. That was, I understand, at the recommendation of Jon DuHamel, project geologist for P.D.'s work at the U.V.X. in 1981-82. Before being drilled, however, I hear that the proposal was axed by more senior geologists or managers within P.D.

   While we know what a hassle it is to deal with P.D., nothing ventured, nothing gained. A lease on the gold zone alone, with appropriate acces via the pit, the No. 7 shaft and the 500-level and 1000-level (Hopewell) tunnels would allows us to pick up a dandy exploration play with far better than ordinary chances of success. We have established ourselves as serious explorationists in P.D.'s eyes by sticking to our project at the U.V.X. P.D. doesn't want to look at their own gold potential and thus has everything to gain by our doing it. P.D. needn't be informed our our M-3 intercept before a deal is consummated. I recommend a high level attempt to arrive at a lease agreement.

   Yet another prospectable chert horizon, attractively adjacent to a diorite body, is reported on the UVX 1300 level 0.7 mile out the Josephine tunnel from the Audrey shaft. That is midway between the Columbia and Dundee shafts (straight beneath the old high school) and off our present lease. I will grub up whatever else I can on that zone as it may have been drilled further up-dip by Anaconda. Bob Rivera tells me that CoCa Mines has given Verde Exploration notice of their intention not to renew their lease as of July 1, 1987. Thus Verde ground in that area should be available to us. We might also want to lease the Josephine tunnel, if it's not already included in our agreement, to cover the possibility of its being needed for haulage. Consider too that we may want to study the larger tonnage, lower grade, bulk mining possibilities with leaching facilities in the Verde Valley. Only the Josephine tunnel could support such production volume.

4) We have some professional obligation to report our abundance of new information to the geologic community and to promote additional study of those issues pertinent to our exploration. We are already sharing our knowledge through our willingness to tour visiting geologists, by my talks to professional societies, and by delegating select aspects of our project for study by others, most notably R.W. Hodder's students. This should continue. We have very little to lose and much to gain by sharing our lessons and learning from others on this project. There are many fascinating subjects which will make excellent undergraduate and graduate level thesis topics. We are well supplied with samples for study and ought to promote their use for everyone's benefit, including our project.

DW:sk

TABLE 1

August 2, 1985

To accompany memo by DCW & RWH
Estimted size and grade of 4 areas
United Verde Extension Gold Project

	L	W	H	Vol Ft^3,K	Tonnage Factor	Tons K	Grade Oz/t	Oz Au K	REMARKS on further target definition
1. Florencia Area									
Best Case	250	20	500	2,500	11	227	0.25	57.0	Can be drilled from PD
Worst Case	100	5	150	75	14	5.3	0.10	0.5	drill station on 1100 level,
DCW-RWH preferred	150	12	300	540	12	45	0.15	6.7	3 holes, 1,810'
2. 1205 "vein" system area									
Best Case	700	25	400	7,000	11	636	0.20	127.2	Above 3 holes will also
Worst Case	300	10	200	600	14	43	0.10	4.3	intersect 1205, add 3 holes
DCW-RWH preferred	500	15	350	2,600	12	219	0.12	26.2	on 950 level, 860'
									3 holes on 800 level, 440'
3. Gold Stope									
Best Case						20	0.5	10.0	No drilling on Gold Stope
Worst Case	Not recoverable					0	0	0	per se. Above holes into
DCW-RWH preferred						20	0.3	6.0	1250 will check for plunge
									and lateral extensions
4. Verde Fault area									
Best Case	800	30	500	12,000	11	1,090	0.20	218.0	Three holes from surface
Worst Case	400	10	300	1,200	14	86	0.10	9.0	for 2400' total
DCW-RWH preferred	500	20	350	3,500	12	292	0.12	35.0	
TOTALS									
Best Case						1,973	0.21	414.3	Total drill footage 5510'
Worst Case						134	0.10	13.4	
DCW-RWH						576	0.13	75.0	
Paul A. Handverger						1,000	0.25	250	

Use Au/Ag of 1/5

ie: 0.13 Au to 0.65 Ag

M E M O

TO: Carole A. O'Brien

FROM: Don White

DATE: March 7, 1987

SUBJECT: Loss of U.V.X. D.D.H. M-3; reasons, charges, and follow-up performance.

Having supplied you with the facts of the situation last week and now in receipt of your March 5, 1987 letter to Mr. Beddow, I feel it still worth recording the details for the file.

Our underground diamond drill hole M-3 was aborted by the Longyear night shift, February 25, 1987. That was while I was in Wickenburg setting up the Vulture drilling. What happened is that the drill string broke off in old workings because of atrocious handling by the drillers. Next day, unable to reach me, they got Joe Reedy on site and ascertained that the last rod with core barrel, bit, and reamer shell were all lost. Joe phoned Carole and extracted a commitment to purchase the lost tools without explaining the particulars as to how they were lost. One simply does not lose core barrels in voids. Nothing more than a single piece of drill steel and casing shoe should be at risk.

Next day I arrived on site with casual questions to the drillers, having already reviewed their daily reports. What came out is that:

1) The driller encountered the void and did not know how to proceed. In his own words, "I've never drilled a void before."

2) He spun the rods across the void to the far wall, 7 feet way (233' - 240').

3) The spinning drill string with normal NQWL hit the far wall, probably oblique to the drill string and torqued everything until the drill string parted, losing all the tools.

This bit was new, having just been put on at 226 feet and the night shift only drilled two feet (231' - 233') before creating the problem. All the rest of the shift was a loss. Furthermore, all the following day shift was spent extracting the rods from the hole as a result of related complications.

This problem typifies Longyear's communication problems. I had just earlier that day discussed in considerable detail with the lead driller what should be done in the event of hitting workings. Indeed, the likelihood of hitting workings was made clear to everyone. When it should happen, Burt Hansen confirmed

that the best procedure would be to 1) push the rods across the void to measure it, 2) pull the rods and put on a casing shoe and, 3) attempt to set that shoe in the far wall. At that point the driller can advise us whether he has been able to set it or whether it has glanced off or wobbled around in too badly fractured rock. With that information we can assume the risk of going on (casing off and drilling BQ) or choose to abort the hole.

This procedure was followed twice in the past at the U.V.X., once on D.D.H. 1104-1, and once with D.D.H. 806-1. Both times we wanted to go on for geologic reasons and were successful in casing and reducing core size. Almost no time and certainly no tools were lost.

It became quite clear, however, that not only had the night driller not drilled a void before, but he had not been advised by the day driller of what should be done. Hence he did what he wished and we lost the hole, our best hole!

To add insult to injury, Longyear has now tried to:

1) Charge Budge for the lost tools; $700.00 on core barrel, brand new bit (~ $800.00) and reamer shell. No!

2) Charge for "drilling" the void (7 feet at $26.15/ft.)

3) Charge 9 hours the next shift for correcting the problem (at $66 or $71 per hour).

All these are charges on top of the real losses, the hole and the two shifts, all because of Longyear incompetence. And out-of-pocket costs don't count my time, finding out the facts and writing this memo, nor Carole's time dickering with Reedy and Beddow, writing letters, and making several long distance calls.

I maintain that any reasonably bright and experienced underground diamond driller would not have done what they did. And thus the losses we suffered and the charges Longyear is now hitting us with would not be experienced with better drillers and a reputable contractor.

Eight working days (16 shifts) have now passed and Longyear has not even seen fit to resupply their crews with a replacement core barrel. Thus with only one inner tube progress is slower (it must be emptied before drilling can resume, thus forcing many delays). Surely there is a better way than with Longyear next time! And surely consenting to any charges on this incident sets an awful precedent for us financially bailing them out for their incompetence.

DW:sk

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Budge 11. G Date: 2 (MONTH) 25 (DAY) 19 87 Drill SKid 34 (TYPE) / R7041 (DRILL NO.) / (TRUCK NO.)

Location: Jerome AZ Foreman's Signature: Bert Hansen

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	M-3 +	20		NQWL	216	231			15	11		
Aft B	M-3 +	20		NQWL	231	241			10	3		
Nite C												

Hourly Distribution	Day	Aft.	Nite
Core Drilling	8	4	
Handling Rod (change bit)	2	6 4	
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling			
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	10	10	
Driller's Initials	B4	D.S.	

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#			1	
Mud EZ	100#				
Other (Describe)					

OTHER

Water hauling _____ miles _____ loads

Core boxes: _____ size/ _____ no.

Length of waterline: _____

Lost tools: Description _____

Lost bits: Size _____ Serial no. _____

Depth: _____ ft. Hole # _____

Casing lost or left in hole: Size _____ ft. _____

for Client _____ Hole # _____

Longco _____ Hole # _____

Bit changes: (Include first bit in hole)

Size	Serial #	Depth
NQWL	L6537 ON	226
Reamer Shell	L2273-3	Lost in Hole

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	B HANSEN	10	R Keedy	10		
B	D. SAGER	10	LOS SAGER	10		
C						

Remarks: Tripped Rods For Bit Chg
Tube head came apart STARTED PULLING RODS
GOT 45' out Rods STUCK REAMED BACKWARS - CANT GET OUT!
H.+ 7' Void From 232 To 240
CLIENT HAS AGREED TO PAY 700.00 ON LOST TOOLS

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Budge U.G Date: 2 (MONTH) 26 (DAY) 19 87 Drill: SK.J 34 (TYPE) / R 704 (DRILL NO.) / (TRUCK NO.)

Location: Jerome AZ Foreman's Signature: Bert Hansen

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	M-3-+	90			171							
Aft B	M-4 +	90			0	10			10	10		
Nite C												

Hourly Distribution	Day	Aft.	Nite
Core Drilling		5	
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling			
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing - Placing			
CASING Pulling		2	
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole		2	
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Fishing & DRILLING RODS BACK	9		
Total Hours	9	9	
Driller's Initials	BH	D.S.	

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					

OTHER

Water hauling _____ miles _____ loads
Core boxes: _____ size/ _____ no.
Length of waterline: _____
Lost tools: Description _____

Lost bits: Size _____ Serial no. _____
Depth: _____ ft. Hole # _____
Casing lost or left in hole: Size _____ ft. _____
for Client _____ Hole # _____
Longco _____ Hole # _____

Bit changes: (Include first bit in hole)

Size	Serial #	Depth

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	B HANSEN	9	R Reedy	9		
B	D SAGER	9	LIS SAGER	9		
C						

Remarks: HAD TO WITH REAM RODS BACK 100 FT before we could pull.
PULLED CASING FROM M3 SET UP ON M4

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

Don-FYI

A. F. Budge (Mining) Limited
7340 E. Shoeman Lane, Suite 111 "B" (E)
Scottsdale, AZ 85251-3335
(Business Office)
Telephone: (602) 945-4630
Telex: 751739

March 5, 1987

Russell Beddow
Longyear Company
7773 W. Seldon Lane
Peoria, AZ 85345

Re: Lost tools in hole M-3
at Jerome.

Dear Russ:

I am concerned about the events leading up to the loss of the core barrel on February 26.

This is not the first time we have drilled workings in the project, nor will it be the last. But this is the first time that equipment has been lost.

The only information I had from Joe Reedy was that the drillers twisted off the core barrel and it was lost. The drill reports indicate the "tube head came apart" and rods were stuck when pulling out. The following day shift on February 26 spent 9 hours "fishing and drilling rods back". My knowledge of the intricacies of drilling is limited to the very basics. I'm not even sure what tools we lost. The drill report indicates a bit and reamer shell; you and Joe were talking about core barrels and locking devices.

We agreed to pay the $700.00 for the lost tools and we are standing on that agreement. To err is only human. But when I receive information about the rods being spun across the void and no casing shoe set, procedures which, I have been advised, are not the correct procedures for breaching a void, I begin to suspect that something is not right. There are strong indications that mistakes are being made as a result of inexperience and lack of communication. These mistakes, if they are indeed being made, should not be at our cost.

cont'd...

Through February 15, according to your invoices, and not including mobilization, our 451 feet drilled cost $40.40/ft. This is a resonable cost considering straight footage plus 50% as a guide. We will be unable to calculate overall costs and evaluate performance until the end of the program. We trust at that time, costs will have been justified.

Best regards.

Sincerely,

Carole A. O'Brien

c: A.F. Budge
J.D. Powers
D.C. White

INTER-OFFICE

TO: A. F. Budge Mining Ltd. DATE: March 12, 1987

FROM: H. G. King

SUBJECT: Planning for Future Mine Development at UVX Mine

LOCATION: Jerome, AZ MEETING DATE: March 11, 1987

PRESENT: Carol O'Brien, Pete Flores, Joe Fernandez, Howard King, and Don White (part-time)

- Primary subject of discussion was to evaluate the need to design, construct, and install a skip at the Edith shaft of the UVX mine provided continuing mine development becomes economically feasible.

- To determine a basis for skip design, future mine operational requirements were assumed to be as follows:

  - Skip would be designed to take the maximum load possible with the existing shaft size, headframe, and hoist installation. (Hopefully this would allow the mine to produce 100 tons of rock from underground per shift.)

  - Mine would operate two shift per day.

  - Main skip loading station would be designed and built for loading from the 950 level since the great majority of production will come from that level.

  - Loading at 1100 level could be done at a later date but with slightly less skip capacity and less sophisticated loading pocket.

  - Future surface ore processing plant would be operated on the day shift only.

  - Primary crushing could take place underground at the 950 level which would have some effect on the skip design.

  - The man cage will likely be suspended under the skip for operational purposes.

- Mine operations will probably need the skip in the near future if further development of the mine proves feasible since waste disposal areas are no longer readily available underground.

- Joe Fernandez will furnish the maximum unit weights and hardness of rock types that will be passed through the system in order to determine crushing requirements and optimum skip size.

- Current thinking is that a surface processing plant would be built to pass R.O.M. waste through to a surface dump site and to reduce ore to ¼-inch by zero and 2-inch by ¼-inch sizes.

- Due to environmental considerations, the surface processing plant would be operated on the day shift only.

- A search will be made for a used skip, and, if unavailable, both in-house designs and purchase from a skip manufacturing company will be economically evaluated.

- Until future extensive mine production proves feasible, the only new materials handling plant facility to enter into advanced design at this time will be the skip and necessary modifications to the headframe and loading station to accommodate the skip.

H. G. King

H. G. King

copy: Carol O'Brien
Pete Flores
Joe Fernandez

Assumptions and Parameters

gold	$450.00	per ounce
silver	$7.50	per ounce
low grade reserves	120000	tons
grade (gold)	0.172	oz/t
grade (silver)	2.68	oz/t
high grade reserves	46000	tons
grade (gold)	0.267	oz/t
grade (silver)	3.31	oz/t
low grade reserves (total)	360000	tons
grade (gold)	0.172	oz/t
grade (silver)	2.68	oz/t
high grade reserves (total)	138000	tons
grade (gold)	0.267	oz/t
grade (silver)	3.31	oz/t
cost, mining rock	$60.00	per ton
Smelter return (%)	0.85	85%
Recovery in CIL	0.85	85%
Processing, CIL	$9.00	per ton
Transporation	$13.00	per ton

Assumptions and Parameters

gold	$450.00	per ounce
silver	$7.50	per ounce
tons of high grade	127000	tons
grade	0.086	oz/t
strip	3.6	3.6:1
tons of low grade	445000	tons
grade	0.062	oz/t
strip	2.9	2.9:1
tons of tailings	225000	tons
grade	0.045	oz/t
cost, mining rock	$1.50	per ton
cost, mining tails	$1.00	per ton
recovery, rock (heap)	0.55	55%
recovery, fines (CIL)	0.85	85%
recovery, tails (heap)	0.7	70%
recovery, tails (CIL)	0.85	85%
processing, heap leach	$5.50	per ton
processing, CIL	$9.00	per ton

Low Grade Reserves: $\frac{500 \text{ ft.} \times 80 \text{ ft.} \times 40 \text{ ft.}}{13 \text{ cu.ft./ton}} = 120{,}000 \text{ tons}$

High Grade Reserves: $\frac{500 \text{ ft.} \times 80 \text{ ft.} \times 15 \text{ ft.}}{13 \text{ cu.ft./ton}} = 46{,}000 \text{ tons}$

Total: above numbers x 3

UVX Mine Options (June 18, 1987)

Assumptions: Gold at $450.00/ounce
Silver at $7.50/ounce

(A) Indicated Low Grade Reserves of 120,000 tons of 0.172 oz/t gold and 2.68 oz/t silver
Indicated by drilling from Morgan and 809 Drill Stations

(B) Indicated High Grade Reserves of 46,000 tons of 0.267 oz/t gold and 3.31 oz/t silver
Indicated by drilling from Morgan and 809 Drill Stations

(C) Indicated TOTAL Low Grade Reserves of 360,000 tons of 0.172 oz/t gold and 2.68 oz/t silver
Indicated by drilling from Morgan and 809 Drill Stations

(D) Indicated TOTAL High Grade Reserves of 138,000 tons of 0.267 oz/t gold and 3.31 oz/t silver
Indicated by drilling from Morgan and 809 Drill Stations

	(A) Ore to Smelter or Custom Mill	(A) Ore to CIL Plant at UVX	(B) Ore to Smelter or Custom Mil	(B) Ore to CIL Plant at UVX	(C) Ore to Smelter or Custom Mil	(C) Ore to CIL Plant at UVX	(D) Ore to Smelter or Custom Mil	(D) Ore to CIL Plant at UVX
Gross Revenues	$8,026,380	$8,026,380	$5,668,523	$5,668,523	$29,835,000	$29,835,000	$17,005,568	$17,005,568
Capital	$0	$1,000,000	$0	$1,000,000	$0	$1,000,000	$0	$1,000,000
Operating Costs								
Mining	$7,200,000	$7,200,000	$2,760,000	$2,760,000	$21,600,000	$21,600,000	$8,280,000	$8,280,000
Processing	$0	$1,080,000	$0	$414,000	$0	$3,240,000	$0	$1,242,000
Transportation	$1,560,000	$0	$598,000	$0	$4,680,000	$0	$1,794,000	$0
Operating Profit	($733,620)	($253,620)	$2,310,523	$2,494,523	$3,555,000	$4,995,000	$6,931,568	$7,483,568
Recovery of Capital	($0)	($1,000,000)	($0)	($1,000,000)	($0)	($1,000,000)	($0)	($1,000,000)
Sunk Costs	($1,580,000)	($1,580,000)	($1,580,000)	($1,580,000)	($1,580,000)	($1,580,000)	($1,580,000)	($1,580,000)
Additonal Exploration	$0	$0	$0	$0	($900,000)	($900,000)	($900,000)	($900,000)
Net Profit on Project	($2,313,620)	($2,833,620)	$730,523	($85,478)	$1,075,000	$1,515,000	$4,451,568	$4,003,568

Carole

Don White
6-1-87

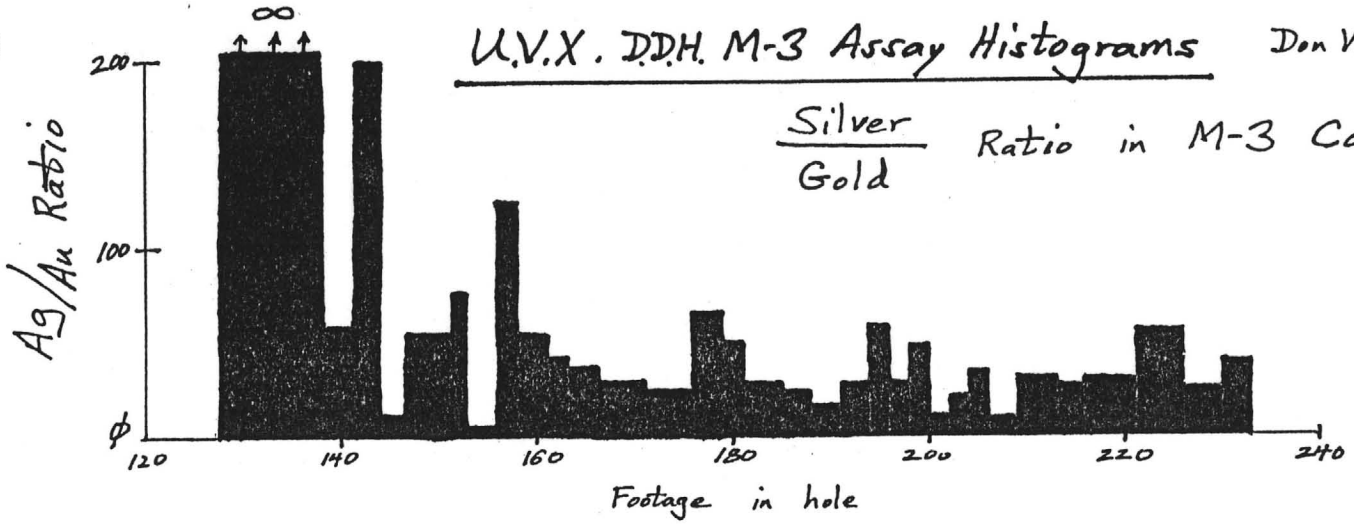
U.V.X. D.D.H. M-3

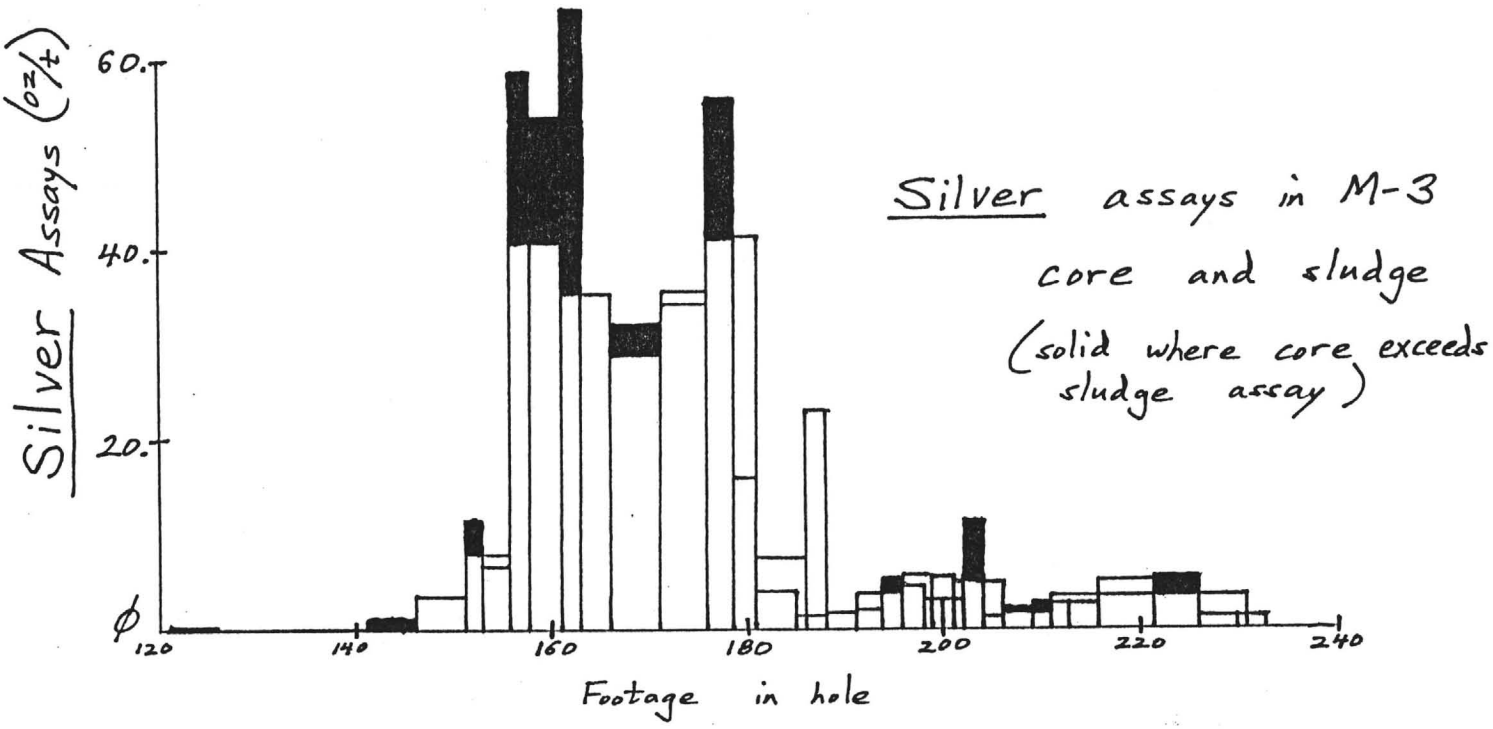
Intercept assays and base metal + iron analyses weighted by footage.

D.H. Footage	D.H. Intercept	Approx. true thickness	Au oz/t	Ag oz/t	Cu ppm	Pb ppm	Zn ppm	Σ bm. ppm	Fe wt.%	Remarks
153-179	26	18	1.101	39.74	56	631	48	735	1.90	Best Au & Ag within grit
151-185	34	24	.882	32.45	107	680	93	880	3.52	Silica grit
146-204	58	41	.571	20.53	250	748	210	1208	10.86	Grit + breccia
146-226	80	56	.444	15.78	397	645	297	1339	16.80	Grit, breccia + ferruginous
131-146	15	11	.002	.41	43	260	102	405	2.58	Massive + banded si
185-233	48	34	.115	3.13	540	320	434	1294	24.76	Most ferruginous chert only.

U.V.X. D.D.H. M-3 Assay Histograms

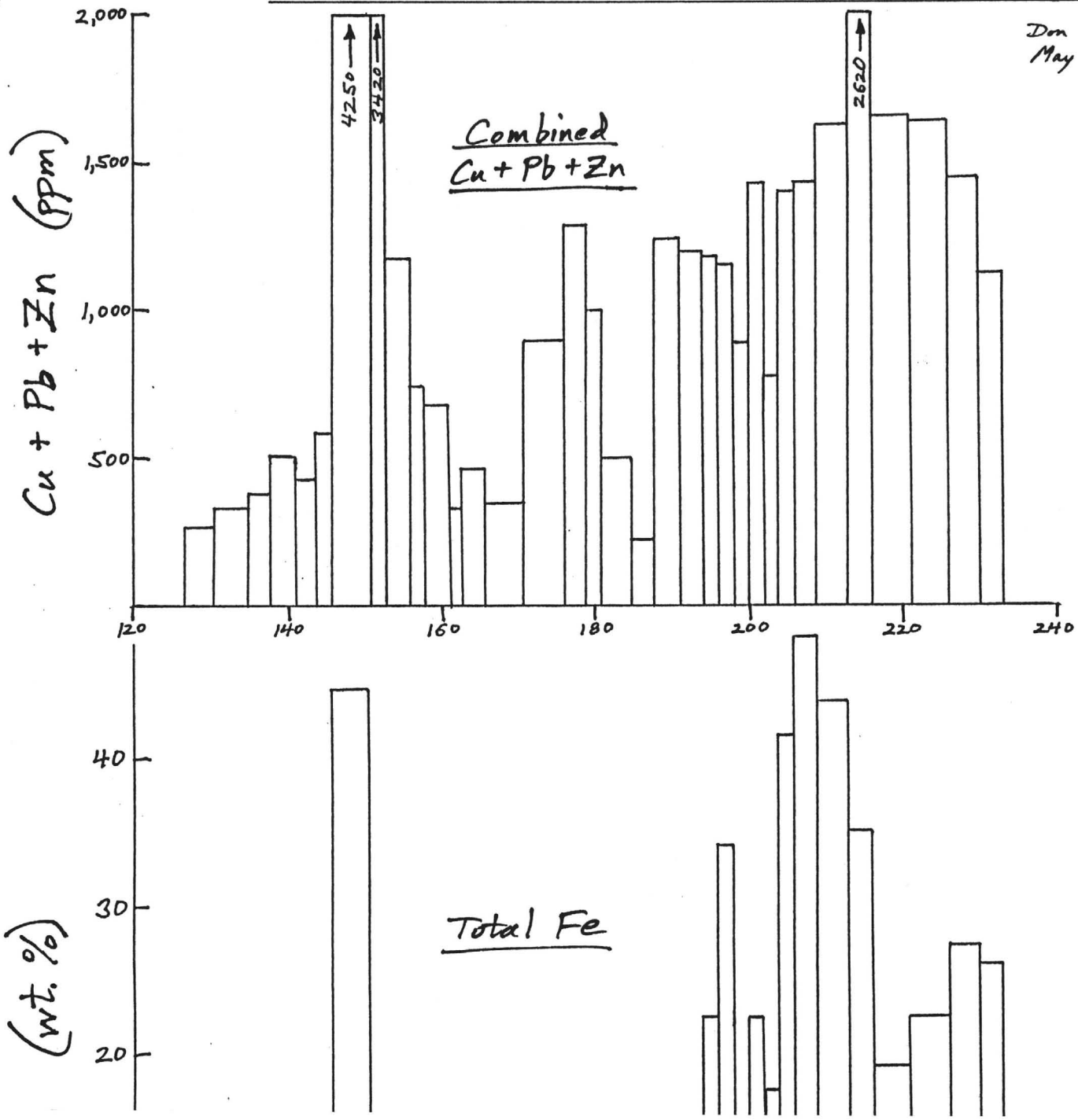
Don White March '87





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

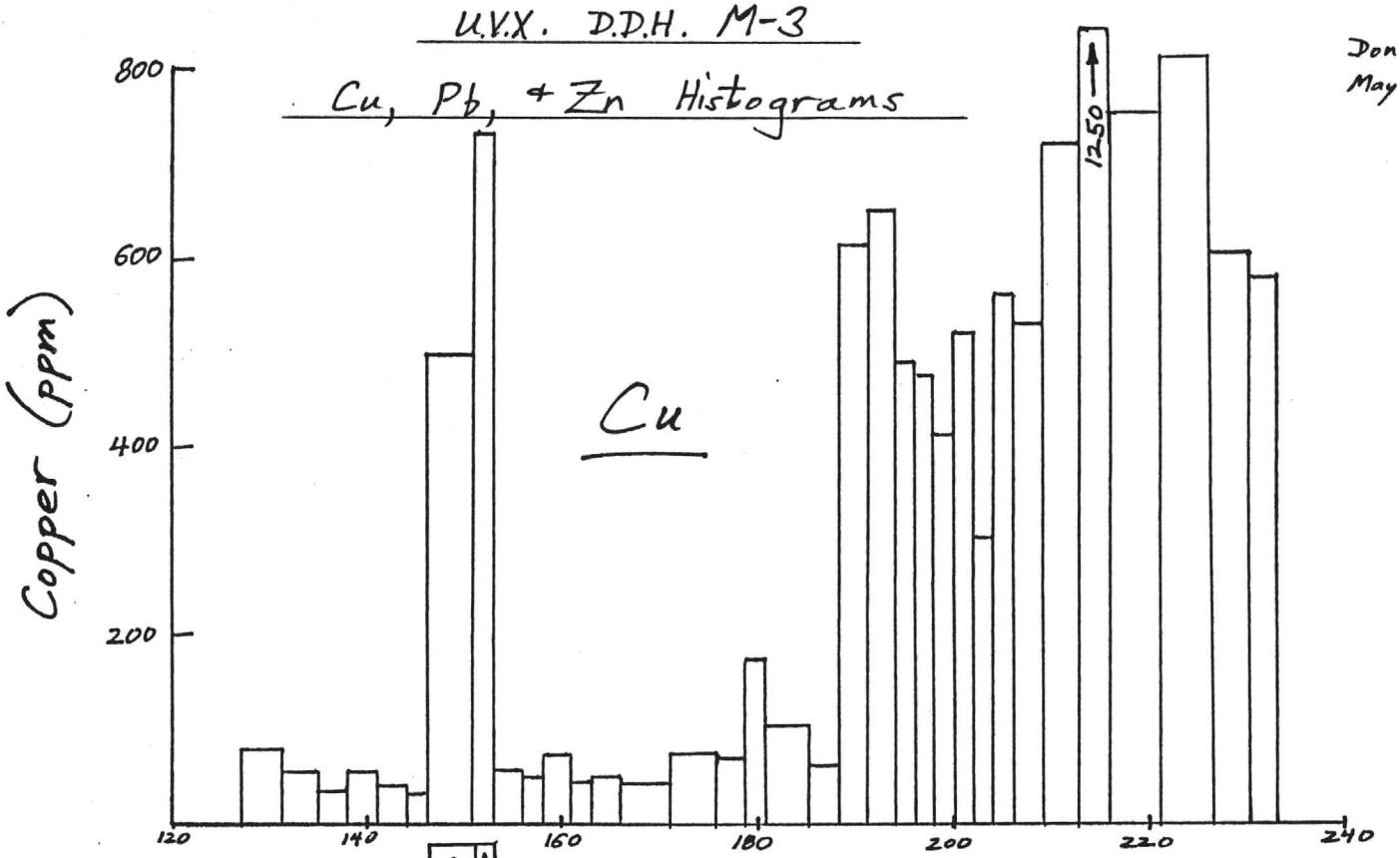
Don White
May 31, 1987

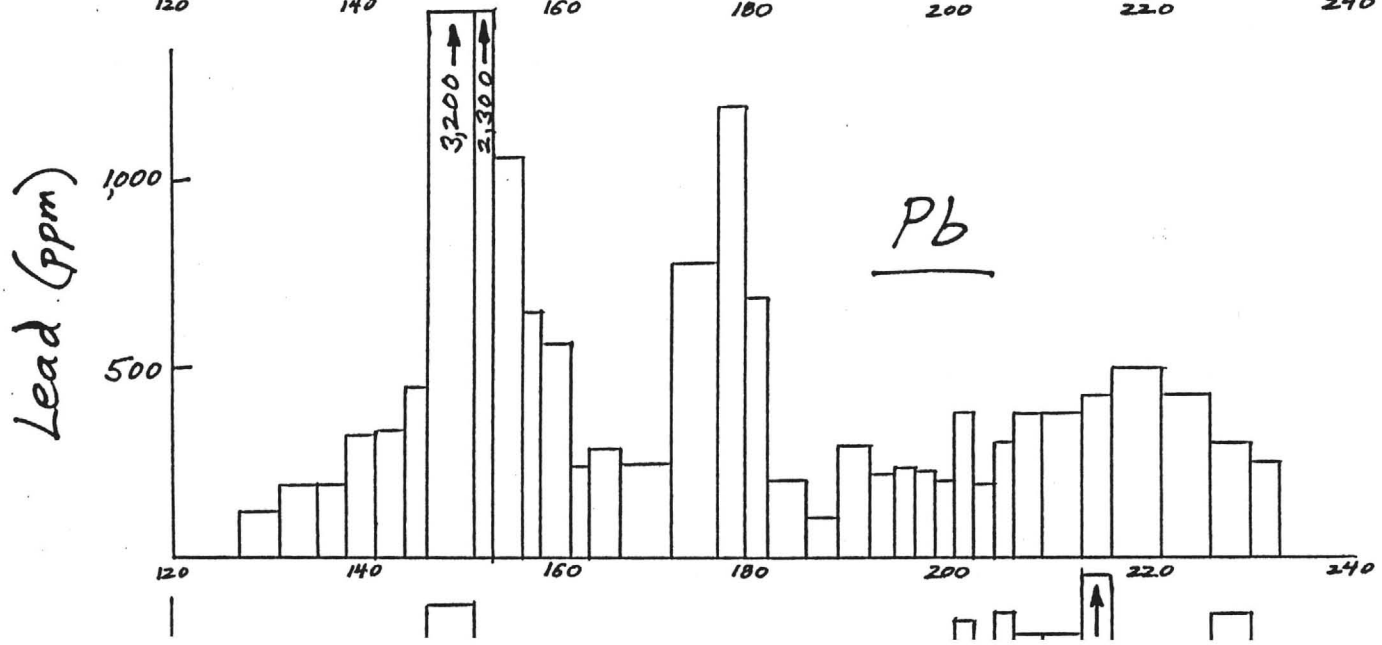


U.V.X. D.D.H. M-3

Cu, Pb, + Zn Histograms

Don White
May 31, 1987





Carole

U.V.X. M-3 Bulk Density Data

02-Jun-87

LAB JOB #: AFB01570

ATTN: Carole A. O'Brien

Client name: A. F. Budge (Mining) Ltd.

No. Samples: 12
Date Received: 05-19-87
Submitted by: Don White

Billing address: 7340 E. Shoeman Lane
Suite #111-B-E
Scottsdale, AZ 85251

Phone number: 945-4630 / 778-3140

INVOICE ATTACHED

ANALYTICAL REPORT

Bulk Density Determination Test

Client ID AFB01570	Lab ID	grams/ cu. cm.	lbs./ cu. ft.	cu. ft./ sh. ton	Lithology
UVX BATCH #49					
HOLE #M-3 / Core Samples					
128'	1570- 1	2.75	171.7	11.6	Barren: Silicic alt'd diorite (white, ~3' from si contact)
132'	1570- 2	2.76	172.3	11.6	Massive chert (purple)
141'	1570- 3	2.81	175.5	11.4	Yellow-brown, banded chert
155'	1570- 4	2.42	151.1	13.2	Tan silica grit (high grade)
157'	1570- 5	1.48	92.4	21.6	
164'	1570- 6	1.62	101.1	19.8	
184'	1570- 7	2.03	126.8	15.8	Yellow silica grit
187'	1570- 8	2.53	158.0	12.7	Gray chert bx
193'	1570- 9	2.84	177.3	11.3	Hematitic chert bx
200'	1570- 10	2.23	139.2	14.4	Yellow + red silica grit
205'	1570- 11	3.21	200.4	10.0	Dk red-br very ferruginous bx
229'	1570- 12	2.74	171.1	11.7	Red-br. + purple very " "

Low grade

Mineralized ironstone

Averages by lithology:

High grade silica grit	17.5
Low grade combined grit, bx ± hem	13.5
Low grade si bx ± hem.	12.0
Very ferruginous si bx	11.0
Barren massive + banded si	11.5

Don White 6-11-87

DMEA Ltd.
Mineral Exploration Advice

Ben F. Dickerson III
Registered & Certified Geologist
Carole A. O'Brien
Certified Geologist

7340 E. Shoeman Lane
Suite 111 "B" (E)
Scottsdale, AZ 85251-3335
(602) 945-4630
Telex: 75-1739

April 12, 1987

To: Anthony F. Budge

Subject: Probable Ore Reserves in the Verde Area of the U.V.X., tested in recent drilling from the Morgan Drill Station

---

Section III

Block M-4: $\frac{10'+29'}{2}$ x 40' = $\frac{780 \text{ sq.ft.}}{12 \text{ cu.ft./t.}}$ = 65 t./ft.

Block M-6: $\frac{29'+50'}{2}$ x 48' = $\frac{1,896 \text{ sq.ft.}}{12 \text{ cu.ft./t.}}$ = 158 t./ft.

Block M-3: $\frac{50'+55'}{2}$ x 29' = $\frac{1,523 \text{ sq.ft.}}{12 \text{ cu.ft./t.}}$ = 127 t./ft.

Section V

Block M-1: $\frac{20'+50'}{2}$ x 55' = $\frac{1,925 \text{ sq.ft.}}{12 \text{ cu.ft./t.}}$ = 160 t./ft.

Main Zone

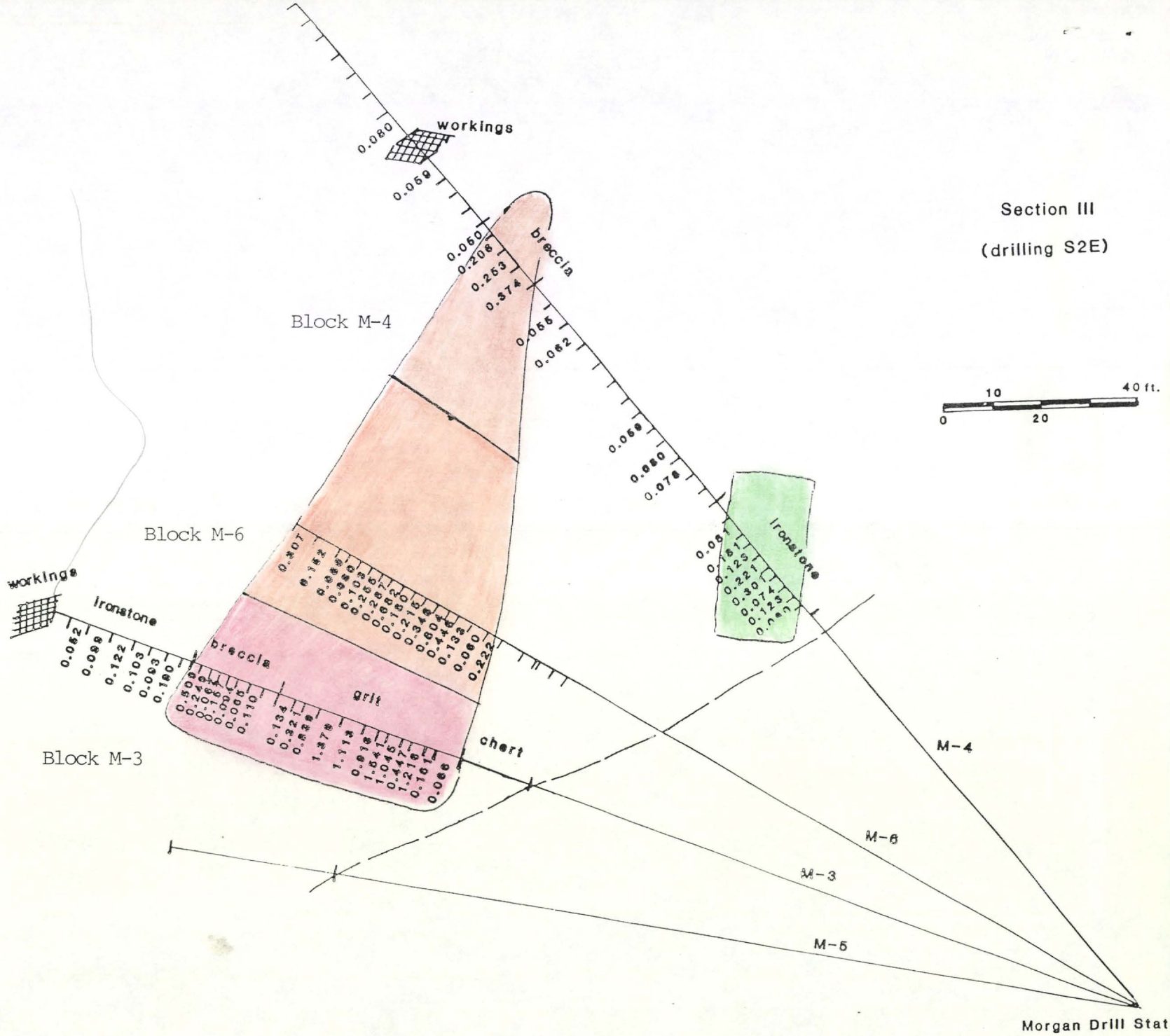
					Gold	Silver
Block M-4:	65 t./ft.	x	95 ft.	= 6,100 t.	0.289 oz/t	2.09 oz/t
Block M-6:	158 t./ft.	x	95 ft.	= 15,000 t.	0.257 oz/t	6.67 oz/t
Block M-3:	127 t./ft.	x	65 ft.	= 8,200 t.	0.571 oz/t	20.53 oz/t
Block M-1:	160 t./ft.	x	95 ft.	= 15,200 t.	0.168 oz/t	1.24 oz/t
Totals & Averages				44,500 t.	0.289 oz/t	6.74 oz/t

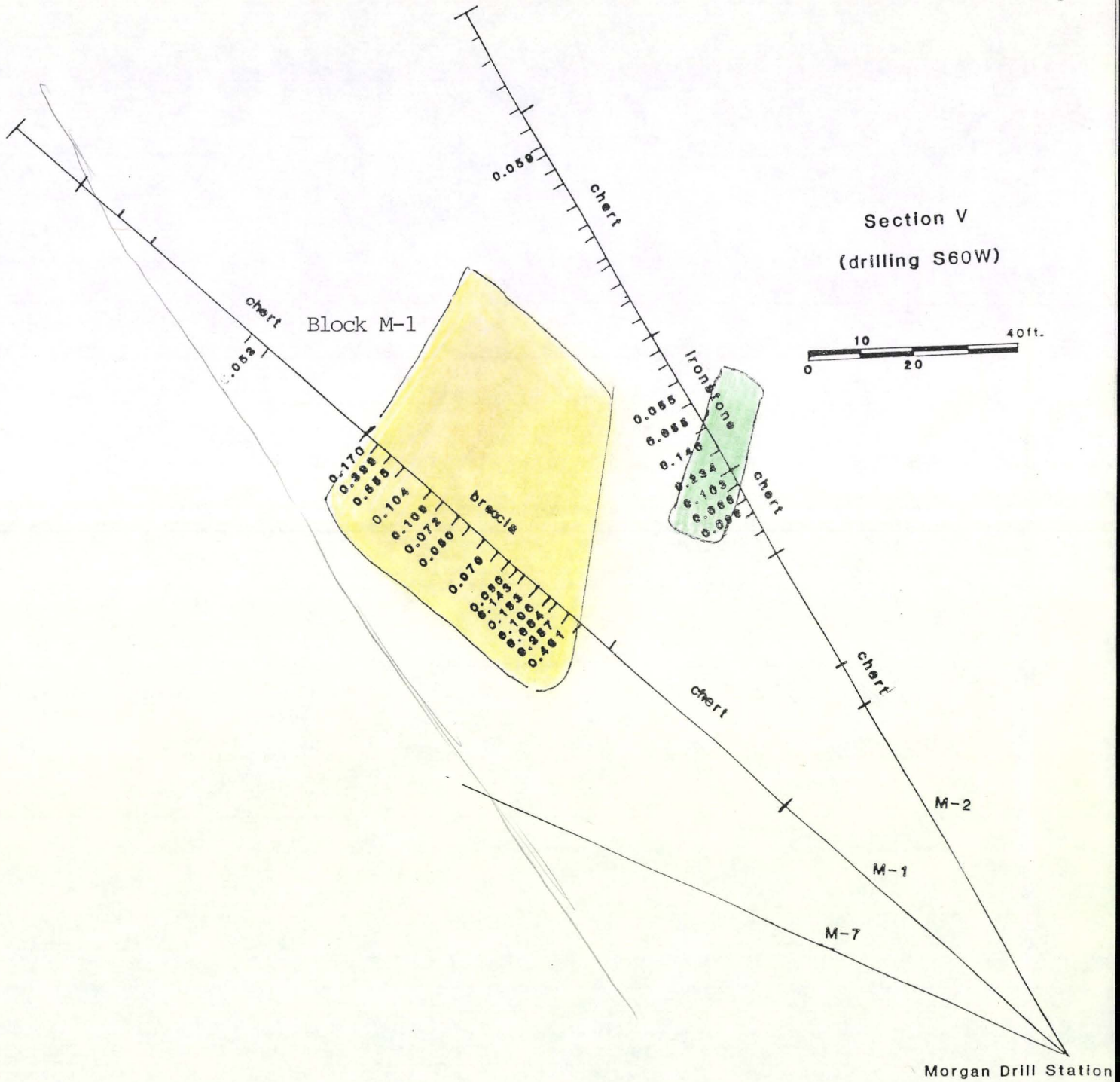
12,800 ounces gold
290,000 ounces silver

Auxiliary Zone (Separate??)

$\frac{115 \text{ ft. x } 12 \text{ ft. x } 30 \text{ ft.}}{12 \text{ cu.ft./t/}}$ = 3,450 t. 0.152 oz/t 2.48 oz/t

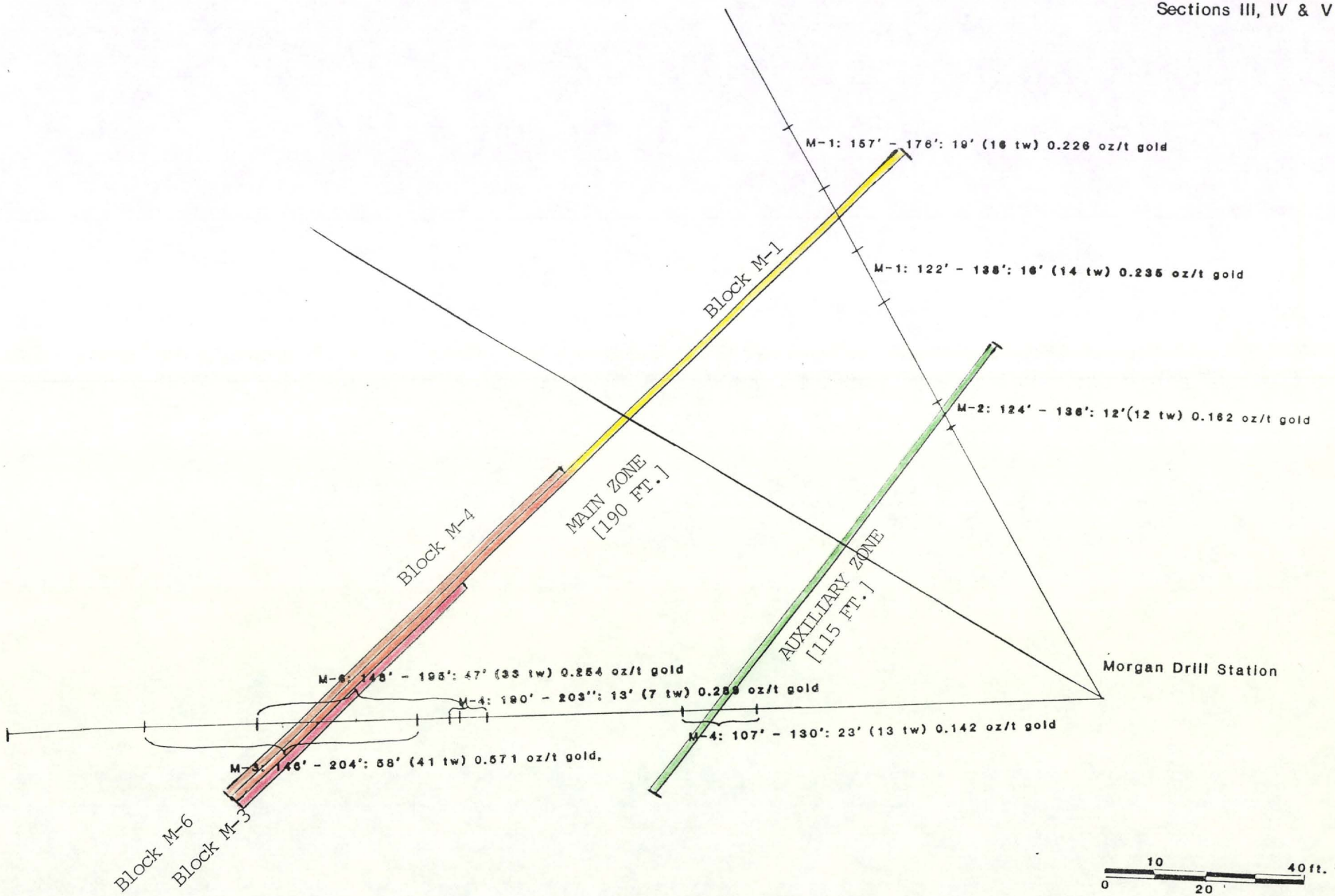
500 ounces gold
8,500 ounces silver


Section III
(drilling S2E)
0 10 20 40 ft.
workings
Block M-4
Block M-6
Block M-3
ironstone
breccia
grit
chert
M-4
M-6
M-3
M-5
Morgan Drill Stati


Section V
(drilling S60W)
0
10
20
40ft.
Block M-1
chert
chert
chert
chert
chert
ironstone
brecia
0.053
0.059
0.170
0.104
0.072
0.070
0.055
0.146
0.234
0.103
0.366
M-2
M-1
M-7
Morgan Drill Station

Plan

Sections III, IV & V



Books Available from the Jerome Historical Society

They Came to Jerome,
Second printing of People History, By Herbert V. Young $8.95

Jerome: The Story of Mines, Men and Money,
pamphlet by James W. Brewer ..... .50

Copper Town Cook Book 4.00

(This cookbook was originally put together as a fund raiser by the Community Service Organization when the Town of Jerome's water lines broke... proceeds from this book now go into the Sewer Fund.)

Verde Valley Railroads: Trestles, Tunnels and Tracks (1895-1953)
by Russell Wahmann 8.30

Jerome Historical Society 1982 Symposium Papers 2.25

Jerome Historical Society 1983 Symposium Papers 2.25

Jerome Historical Society 1984 Symposium Papers 2.25

Jerome Tourguide Book 2.25

(Plus 7% tax and $1.50 for postage and handling)

Jerome Historical Society Membership (1year) 5.00

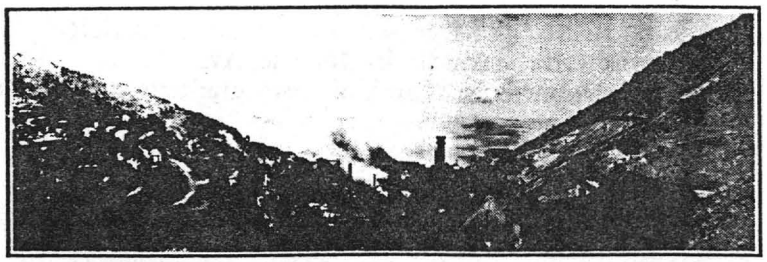
(Your yearly membership donation to the Jerome Historical Society supports many projects. It helps in our preservation and restoration of old Jerome and represents an understanding of the importance of preserving history. As a member you get free admission to our Museum and you will recieve our quarterly newsletter which includes articles of historical interest and information on current activities and events in Jerome. Dues are deductible from Federal and State Income tax to the full extent allowed by law. We appreciate your interest and support.)

The
Jerome Historical
Society presents

Cleopatra's Lasting Legacy

August 22, 1987 2:00pm
Lawrence Memorial Hall, Jerome

THE TENTH ANNUAL HISTORIC SYMPOSIUM PROGRAM



•Admission Free • Donations Welcome •

Sandie

Welcome remarks..... Margaret Tovrea, Society President

The Hows and Whys Behind the Development of Hydroelectric Power in Fossil Creek Canyon,
Richard Effland, Ph.D., President of Archeological Consulting Services Ltd., presently consultant for Arizona Public Service

Tribute to Menica (Mickey) Peterson, member, officer of Society and devoted employee
Margaret Tovrea and Russell Wahmann, past Curator

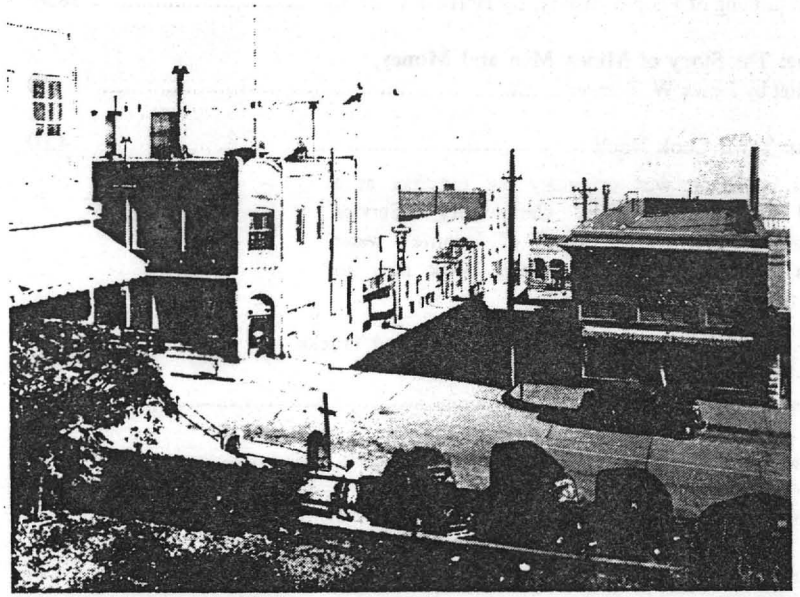
Short Intermission

The 1930's: A Decade of Changes in Jerome
Nancy R. Smith, local historian and Society archivist

A Brief History of Copper Mining and Associated Environmental Impacts in Jerome, Az.
Diann Peart, Arizona State University graduate student in the Geography Department

Champagne punch, photograph and artifact exhibit for the enjoyment of speakers and guests.

SUPPORT YOUR LOCAL HISTORICAL SOCIETY!



Main street Jerome in the 1930's.

We would like to take this opportunity to acknowledge and thank the folowing people and businesses for their contributions to today's program:

Margaret Tovrea, Diane Johnson, Nancy R. Smith, Russell Wahmann, Richard Effland, Diann Peart, Becky Dowling, John Bell, Duke Cannell, Gary Romig, Susan Kinsella, Cottonwood Instant Print, John's Design, Jeanne Welch, Betty Bell, Patty Bell, Nancy Palumbo, Walter Rapaport, Kim Wennet, Eloise Wahmann, Dennis Preisler, Susan Dowling, Barbara S. Macnider, Mickey Peterson, Mary Lou Thompson, Rosanne Edwards.

Verde

The Independent (Cottonwood/Verde Valley, AZ)

Thar's gold in them thar hills!