GEOLOGIC REPORT

and

PROPOSED EXPLORATION

TRIPLE S MINE

YAVAPAI COUNTY, ARIZONA

OFFICIAL
COPY
O. M. E.
RECEIVED
AUG 1 1967
INITIALS | CODE

TABLE OF CONTENTS

	Page
SUMMARY	i
INTRODUCTION	1
LOCATION, ACCESSIBILITY & CLIMATE	1
GEOLOGIC SETTING AND MINERALIZATION	3
HISTORY OF MINING OPERATIONS	5
PROPOSED EXPLORATION	11
CONCLUSION	17

LIST OF FIGURES & PLATES

Figure 1	- Index Location Map (1"=1 mile)	Following Pg. 2
Plate 1	- Claim Map of Patience Mining Group, Showing Area Included in OME Application (1"=1000')	Following Pg. 17
Plate 2	- Geologic and Assay Section of Gossan Outcrop (after R.G.Raabe, 1"=20')	Following Pg. 17
Plate 3	- Plan & Sections - Shaft (after R. G. Raabe, 1"=20')	Following Pg. 17
Plate 4	- Geologic & Assay Plan, Adit No. 1 (after R. G. Raabe, 1"=20')	Following Pg. 17
Plate 5	- Geologic & Assay Plan, Adit No. 2 (after R. G. Raabe, 1"=20')	Following Pg. 17
Plate 6	- Triple S Adit (Assay & Geology Plan) (1"=20')	In Pocket
Plate 7	- Triple S Mine - Assay & Geologic Plan of Adit Driven from Top of Raise (1"=20')	Following Pg. 17
Plate 8	- Section A-A',N34°E Vertical Longitudinal Section Thru Triple S Mine Workings (1"=40')	Following Pg. 17
Plate 9	- Topographic & Geologic Map of Immediate Area of the Triple S Workings (Showing Proposed Drill Holes in Plan) (1"=40')	In Pocket
Plate 10	- Vertical Cross Sections Through Proposed Diamond Drill Holes (1"=40')	In Pocket
Plate 11	- Portion of Patience Group, Triple S Mine Exploration Area (Showing Geology & Outline of Proposed EM Survey) (1"=100')	In Pocket

APPENDED DATA

Appendix "A" - Assay Certificates

Appendix "B" - Literature on Geonics Ltd., Ronka EM 16 Electromagnetic Detector

SUMMARY

The Triple S Mine, a copper property about 10 airline miles south of Prescott, Arizona, has been the subject of underground exploration by a group of individuals (The Triple S Joint Venture Syndicate) each summer since 1962.

During this period, the syndicate has expended in excess of $23,400 in the driving of more than 600 feet of underground workings. Although this work has not proven commercial grade ore in exploitable amounts, it has shown that strong copper mineralization occurs along two ore loci; 1) in conformable lenses along a favorable Precambrian contact, and 2) within the plane of a sizeable cross fault.

An exploration program is proposed herein to test both of these potential ore structures. This program consists of two phases, an early phase of diamond drilling and geophysical work (costing a total of $13,677), and a later phase of further diamond drilling (estimated to cost $7,923), for a total exploration cost of $21,600.

The main report contains details on the geology and mineralization of the deposit, as well as geologic and assay maps on various scales. Appended to the text are other supporting data in the form of assay certificates and a description of the geophysical equipment that is to be used.

INTRODUCTION

The Triple S Mine consists of a promising copper prospect that has been the subject of intermittent underground exploration work by a group of individuals since the summer of 1962. These individuals have associated themselves into a group termed the Triple S, Joint Venture Syndicate. Since starting operations in 1962 the current operators have expended approximately $23,400 in cash, plus an aggregate of several man months of non-reimbursed labor.

In the spring of 1965 it was decided that the property would require diamond drilling and some roads and drill sites were constructed. Shortly following this period, the joint venture was re-organized to allow for further financing and funds were obtained which would allow a limited drilling program.

With the announcement during 1966, whereby the Office of Minerals Exploration expanded their coverage to include copper, a vote was taken of the joint venture participants and it was decided to make application for an OME participation loan. This report is being written for the purpose of contributing the required technical information to accompany that OME application.

LOCATION, ACCESSIBILITY & CLIMATE

The Triple S Mine is located approximately 19 road

miles (10 airline miles) due south of Prescott, Arizona. The 15 unpatented claims cover a rather rugged area in which elevations range from 6,000 ft. to 6,700 ft. above sea level.

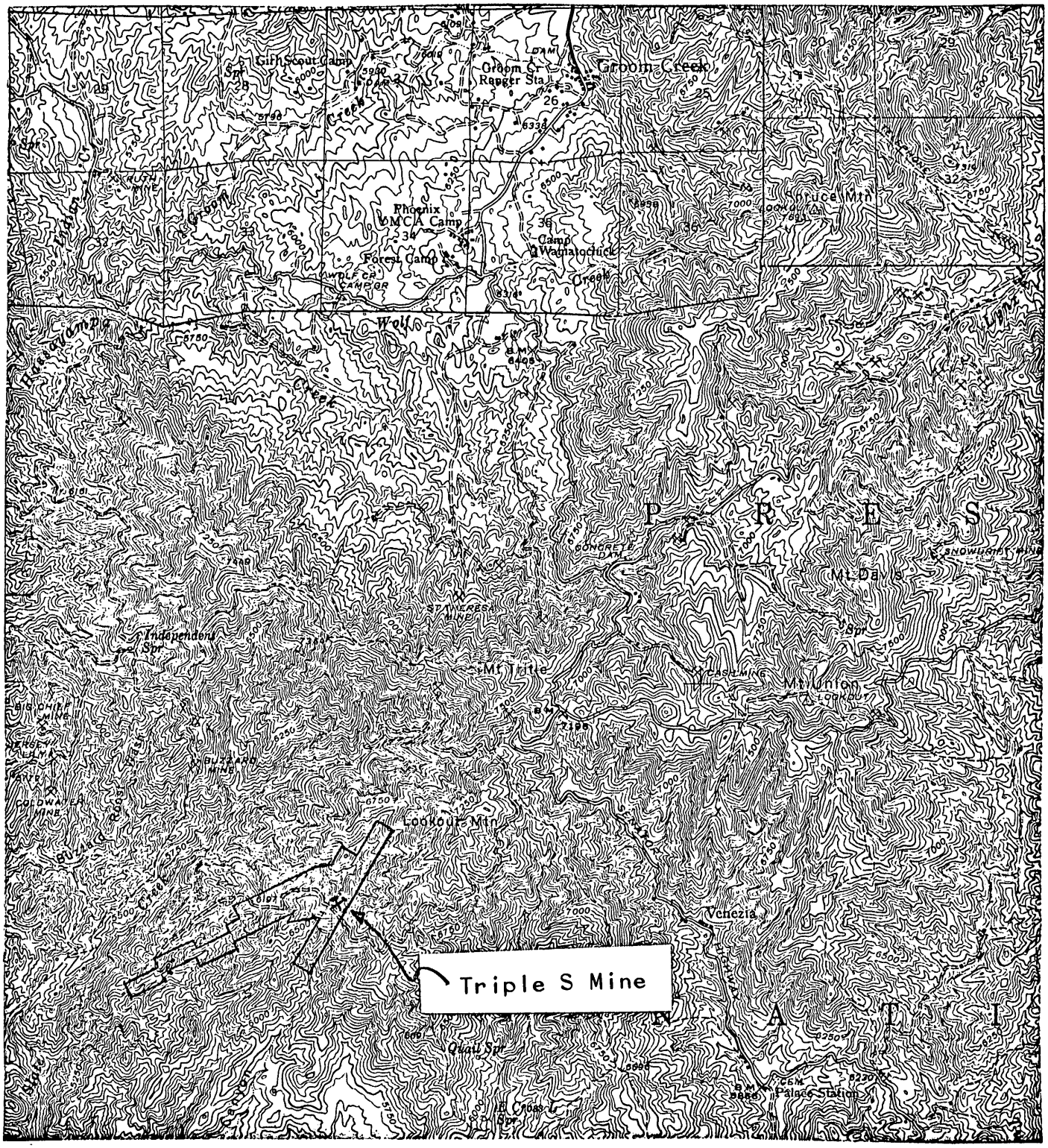
The area is reached (see Index Map, following this page) by going south on the Senator Highway from Prescott for a distance of 14 miles, and thence west, on the "Golden Eagle Mine" road, for a distance of five miles.

Approximately the northern one-third of the claimed area is covered with a moderate to heavy growth of native pine timber, while the Southern portion of the property has a very dense cover of oak brush and manzanita. Due to this cover, rock outcrops do not predominate.

The climate in the summer is mild, with frequent rains during the afternoons in July and August. The winters are normally mild until late November or early December, when snow falls of up to 6" to 12" can usually be expected. Current access to the mine, however, requires traversing Mount Union Pass (7,200' elev.), and this pass may be blocked with from 2 to 4 feet of snow during the middle of the winter season (November through early March).

In the event of an economic discovery on the property, the owners anticipate the construction of one-half mile of new road, which would connect with existing roads, to give access

Figure 1



Index Location Map

PATIENCE (CONN) GROUP AND TRIPLE S MINE

A.R. Still Scale: 1" = 1 mile July 1967

Note: Base map after U.S.G.S.
Mt. Union, Ariz. quad.

to Wilhoit (on US 89A) to the west, thus alleviating the necessity to cross through Mount Union Pass.

GEOLOGIC SETTING AND MINERALIZATION

Mineralization occurs on the Triple S property within a belt of interlayered Precambrian schists which are bounded to the west by a thick horneblende-feldspar mass and to the east by a granite-gneiss (see plate II). The Precambrian schist belt which hosts the copper mineralization is approximately 1400′ in width and consists of interlayered andesites, rhyolites, quartz porphyry's and brown mica schists. One banded iron formation occurs conformably in the sequence.

Mineralization occurs on the property principally along or near the contact between a "speckled" rhyolite and a brown mica schist. This mineralization appears to be conformable with the lithology. Mineralization also occurs within an east-west trending cross fault which has a horizontal displacement of approximately 250 ft.

The known conformable mineralization occurs as a relatively small, but very high grade, lens (75′ in strike length by up to 4′ in width) of essentially massive chalcopyrite. Adjacent to the conformable lens the rhyolite host has an unusual (speckled) appearance due to the alteration of irregular patches by the introduction of quartz, carbonate and sericite.

This alteration increases underground as strong mineralization is approached but it also occurs, to a greater or lesser degree, in this particular lithologic unit throughout its exposed length on the surface. This unit contains sporadic evidence of Sulphide mineralization, and scattered copper oxide, over a length of approximately 2,000 ft.

Three types of mineralization are known in the property; as follows:

1) Essentially massive chalcopyrite, both in the conformable lens and also within shear zones within the rhyolite which dip more flatly than the lithology.

2) Very light colored, spongy-pyrite which is roughly conformable to the lithology; but which is nearly devoid of values; and

3) Mixed chalcopyrite and magnetite, this material being found only within the plane of the major east-west cross fault.

The massive chalcopyrite mineralization encountered to date on the property will run from 10 to more than 20% in copper and in the order of from 1 to 2 ozs. per ton in silver. The light colored and porous pyrite generally runs less than 1% copper. Mixed chalcopyrite-magnetite mineralization, within the plane of the major cross fault, will assay from 1% to 6% copper, and where exposed underground it has been in all instances partially oxidized and leached. Enclosed with this report are geologic-assay maps on various scales. Appended,

as appendix "A", are copies of assay certificates.

HISTORY OF MINING OPERATIONS

This property was held and operated prior to 1910 and was known during that period as the Lookout Mountain Copper Mine. Before 1910, and probably shortly following that date, five shallow adits were driven and two short shafts were sunk. These workings were all of shallow depth and did little to test the structure.

In 1954, 1955 and 1956 Mr. Charles Conn, of Prescott, Arizona, located a group of 15 unpatented lode claims which covered the old Lookout Mountain Copper Mine property as well as adjacent areas to the south and west. Bound herein, as plate No. 1, is a claim map showing the Patience (Conn) mining claims. Mr. Conn held the property from 1954 until its option to (what is now) the Triple S Joint Venture Syndicate in 1962, but there is little evidence that he did any work other than his original location work and some road maintenance for assessment work.

The writer first visited the property in the fall of 1962 and optioned the property in September of 1962. This first visit to the property was made in the company of Mr. R. G. Raabe, the then resident geologist for Shattuck Denn Mining Corporation at the Iron King Mine. Mr. Raabe had examined the property for

Shattuck Denn and recommended it to them. However, due to other commitments at that time, Shattuck Denn did not pursue the exploration of the Conn prospect. Attached hereto, as plate No's 2, 3, 4 & 5, are geologic and assay maps which were made of the then accessible workings by Mr. Raabe. Copies of the assay certificates for his sampling are enclosed as page 6 of Appendix "A".

In 1962 the most impressive surface evidence of mineralization was an outcrop of gossan (approximately 75' long and up to 4' wide) after massive chalcopyrite. This gossan zone, as sampled by Raabe, assayed from 0.5% up to almost 6% copper, and had a weighted average value of 1.94% copper over a width of 11½'. It was based upon this showing that the original three partners in the Triple S joint venture optioned the property.

During the five summers since 1962 the joint venture has driven 461 feet of drifts and crosscuts, 160 feet of raises, and has done considerable underground long hole drilling. This work, as detailed by periods, is shown on the table following this page: (Table 1). These workings are shown in plan on plate No's 6 & 7, and are shown in longitudinal section on plate 8.

Table I

Triple S Syndicate Work

Period	Work Done
Sept-mid Nov. 1962	Drive 120′ crosscut, drill 54′ diamond drill hole. (hit 12″ massive chalcopyrite at 25′ in DDH, assay 21.9% Cu, 1.9 oz. Ag).
Mid April-early Dec. 1963	Intermittent operation. Drive 250′ of drifts and crosscuts, put up 114′ of raises and drill 123′ of long holes with extension steel.
June 3-20, 1964	Drive 16′ of drifts and put up 25′ raise on south end of adit level. Surface and underground geologic mapping. Some magnetometer and EM (Crone) surveys.
Summer 1965	More extensive surface geologic mapping. Build diamond drill access roads and drill sites with bulldozer.
July 18-Nov. 2, 1966	Extensive timbering in adit level, hole through raise to surface and run 75′ slusher drift approximately 25′ below gossan outcrop.

The original concept of the current operators was to drive a crosscut adit under the surface gossan outcrop and intersect the structure at about 75 ft. of depth. Upon reaching the point beneath the gossan, however, no structure which could be related to the mineralized outcrop could be identified. What we did find, at this point, was a series of north-east striking, flat dripping (45° to 60°) narrow veins of chalcopyrite, immediately adjacent to the major east-west fault.

With the thought that the ore-shoot must plunge south we drove to the south for approximately 75 ft., but found little other than moderately heavy pyritic mineralization.

At this point in time, a raise was started up (right branch of "Y" shaped raise as viewed from the north) on the strongest chalcopyrite band and it was followed up for approximately 45 ft. (vertically), until it was obvious that the face of our raise was well to the west of the main gossan zone in the outcrop.

The chalcopyrite being followed achieved a maximum width of 18" in this raise. The left hand branch of the raise was then driven, and this branch intersected the surface gossan 40 ft. above the adit level, or about 25 ft. below the outcrop. At this point the structure was entirely leached gossan, assaying 2.3% copper (sample T-24, plate 6).

Using the northern termination of the gossan at the surface, and the northern termination of the same gossan in the

top of the raise, a geologic projection was made which indicated that the ore-shoot should be situated almost due south of the then existing south face on the adit level. Based upon this information, an extension to the workings was driven due south for 40 ft. - crosscutting the host rhyolite at a slight angle - and then a drift was driven to the southwest for 60 ft. along the contact between the rhyolite and the brown mica schist. Some mineralization was found along this contact, as shown on plate 6, but nothing of a size or grade as indicated by the surface gossan. A 25 ft. raise at the south end of the level failed to show any marked improvement in the structure in the vertical direction.

During the summer of 1966 that leg of the main raise containing the gossan was "holed through" to surface and a 75 ft. slusher drift was run to the south approximately 50 ft. above the adit level (see plates 7 and 8). As shown on plate 7, the gossan turned to mixed sulphides within a few feet and then the ore structure was displaced by a small north-south striking fault. Drifting beyond the fault again picked up the structure, which was followed for a total of 75 ft. from the top of the raise. Encouraging grades were encountered (up to 9.48% copper) but widths were narrow and the mine was closed for the winter in early November.

A decision was made at this time to save what remaining

funds the syndicate had to conduct a drilling program to test the deposit at greater depth. To date, our deepest test below the gossan outcrop is at a depth of 120 ft., and the maximum depth of any of our workings is just over 200' . Even within these limited workings appreciable copper has been found, but nothing which can be economically exploited above the scale of a small "chloriding" operation.

As a result of the work completed to this date, on the property, we have established the following facts:

1) The conformable massive chalcopyrite lens which formed the gossan outcrop at surface has either largely been removed by erosion or has an extremely flat rake to the south (i.e. it does not appear to continue downward to the level of the Triple S adit).

2) Copper mineralization, in the form of northeasterly striking, flatly dipping veinlets and stringers (up to 18" wide), occurs within the competent rhyolite rocks adjacent to the major cross fault on both the north and south walls of that fault (see plate No's 3 and 6).

3) The major east west cross fault is itself a locus of mixed chalcopyrite-magnetite mineralization, and many of the other smaller faults which parallel this major structure also contain gossan after chalcopyrite mineralization (see plate No. 6 - samples along major cross fault - and sample No. T-11 on plate No. 9).

4) The known comformable copper mineralization occurs within one "speckled" rhyolite unit, this unit having been displaced horizontally approximately 250' (north side east) by the major cross fault.

5) Mineralization within the plane of the cross fault extends beyond the zone between the two displaced portions of the "speckled" rhyolite (sample T-11, plate No. 9), and is different in character than that which is confined within the "speckled" rhyolite.

Thus, it appears that two types of exploration targets exist on the property. One is to test the plane of the major cross fault itself - especially approximately 200 ft. below the level of the Triple S adit, where other mineralized parallel faults converge into it - and the other is to explore for additional(blinded) conformable chalcopyrite rich lenses along the strike of the favorable "speckled" rhyolite unit. why 200'?

A second "speckled" rhyolite unit is known, and has been in part mapped, approximately 250 ft. to the east of the one containing the main gossan outcrop (see plates 9 and 11). Whether this repetition in the lithologic sequence is normal, or whether it is due to folding or faulting, is unknown at this time. However, due to its similar lithologic character, it too may host blinded chalcopyrite rich lenses, and it will be covered by the EM survey which constitutes a part of the exploration work proposed herein.

PROPOSED EXPLORATION

The exploration which is proposed for this property can be divided into two broad categories. The first of these is the exploration by diamond drilling of the immediate vicinity around the Triple S adit. The second category is for broader exploration along the zone of the Precambrian belt by means of an EM geophysical survey.

The exploration in the immediate vicinity of the Triple S

workings would consist of 6 initial diamond drill holes as shown on plates 9 and 10. Three of these holes are specifically designed to test the mineralized cross fault while the other three are aimed to test for other blinded conformable massive sulphide lenses in the near proximity of the known lens.

The pertinent data on these 6 diamond drill holes is shown in Table II following this page. Drill sites have already been prepared for the drilling of these 6 holes, although a bulldozer would have to be brought in to dress up the roads and sites prior to the start of drilling.

Diamond drill bids have been obtained from both Boyles Brothers Drilling Company and from Mr. G. S. Thatcher, an independent drilling contractor. Mr. Thatcher's bid is by far the most favorable of the two, and we would anticipate awarding the diamond drilling to him. We are thoroughly familar with Mr. Thatcher and feel that he is entirely competent to successfully complete the drilling anticipated in accordance with the prices given in his proposal.

During the period of drilling it is proposed that an electromagnetic survey be conducted over a length of approximately 2500' and a width of 800' centering around the area of the Triple S workings. This EM survey is designed to test the speckled rhyolite bands for electrical conductors which could indicate additional conformable massive sulphide (chalcopyrite rich) lenses.

Table II

Pertinent Data on Proposed Drill Holes
(See Plates 9 & 10)

Hole No.	Depth	Angle	To Test
1	305′	-70	Main fault in area of junction of many converging faults @ 200′ below crosscut & raise
2	150′	-35°	Main fault at 100′ depth below crosscut and 100′ east of DDH-1
3	180′	-65	Main fault at 180′ below surface, 100′ west of DDH-1
4	175′	-60	Conformable lens below old shaft at 100′ below surface (i.e. 60′ below old shaft bottom)
5	350′	-60	Conformable lens 180′ below crosscut just south of main cross fault
6	350′	-46	Main conformable structure 100′ below south drift, 160′ south of main cross fault
	1510′		

An estimate of cost for such an EM survey has been obtained from Canadian Aero Mineral Surveys Ltd. as shown in item 7(a) of the OME application. We have not called for additional bids for the EM survey since we have found from past experience in this area that Canadian Aero Mineral Surveys is the most competent geophysical contractor available.

As a part of the geophysical survey, but not included in Canadian Aero's estimated cost, it would be necessary to extend our existing baseline grid on the property. It is proposed that this additional surveying will be done at cost by personnel employed by Still & Still, but in no event will the cost exceed $1,000.

The equipment to be used by Canadian Aero Mineral Surveys for the EM survey would be a Ronka EM 16 Electromagnetic Detector as illustrated in a Geonics Ltd. brochure attached hereto as Appendix "B". Mr. W. Gordon Wieduwult, geophysicist for Canadian Aero Mineral Surveys, has recommended this specific piece of equipment as being the most applicable for our particular problem.

It is anticipated that the exploration program proposed herein would be conducted in two phases. The initial phase would consist of the drilling of the 6 described diamond drill holes and the conducting of the EM survey, costing a total of $13,677.00. A second phase is contemplated which would

consist of follow-up drilling on either geophysical anomalies which may be developed, or of deeper drilling under the Triple S Mine workings area, if warranged. This second phase, which consists essentially of an additional 1,000′ of diamond drilling, is estimated to cost $7,923.00. Further details on the proposed work and costs of the two phases are shown on Table 3 following this page.

Table III

Phase I

Dozer - dress roads & drill sites		$ 400.00	
Drilling initial 6 holes - 1510' @ $6.50		9,815.00	
Core trays, blocks @ 10¢/ft		151.00	
Assays - 100 @ $3.00 ea.		300.00	$10,666.00
Supervision of drilling, core logging, core handling, core splitting by S&S (at cost)			300.00 (1)
Additional geologic mapping over area of EM survey (by ARS)			n/c
Baseline survey (by S&S)	$1,000.00		
EM survey ($1,411 + $300.00*)	1,711.00		2,711.00
			$13,677.00

(*) Anticipating 2 days fill in, see CAMS bid of May 25, 1967, page 2, last paragraph

Phase II

Follow-up drilling on geophysical anomalies and/or deeper drilling under Triple S mine workings area, if warranted, as follows:

Road & drill site construction		$ 750.00	
Diamond drilling 1000' @ $6.50		6,500.00	
Core boxes, blocks @ 10¢/ft		100.00	
Assaying 66 samples @ $3.00		198.00	
Supervision, core logging, core handling, splitting (at cost to S&S)		250.00 (1)	
Contingencies - misc. supplies, etc.		125.00	7,923.00
			$21,600.00

(1) Cost to include mileage at 12¢/mi. plus reimbursement for wages paid to core splitter, sampling supplies, etc.

CONCLUSION

Although the present workings on the Triple S property have failed to develop commercial grade copper ore in exploitable amounts, they have exposed strong copper mineralization in two different modes of occurrence.

The workings to date have tested the potential ore structure only in local areas and at very shallow depths.

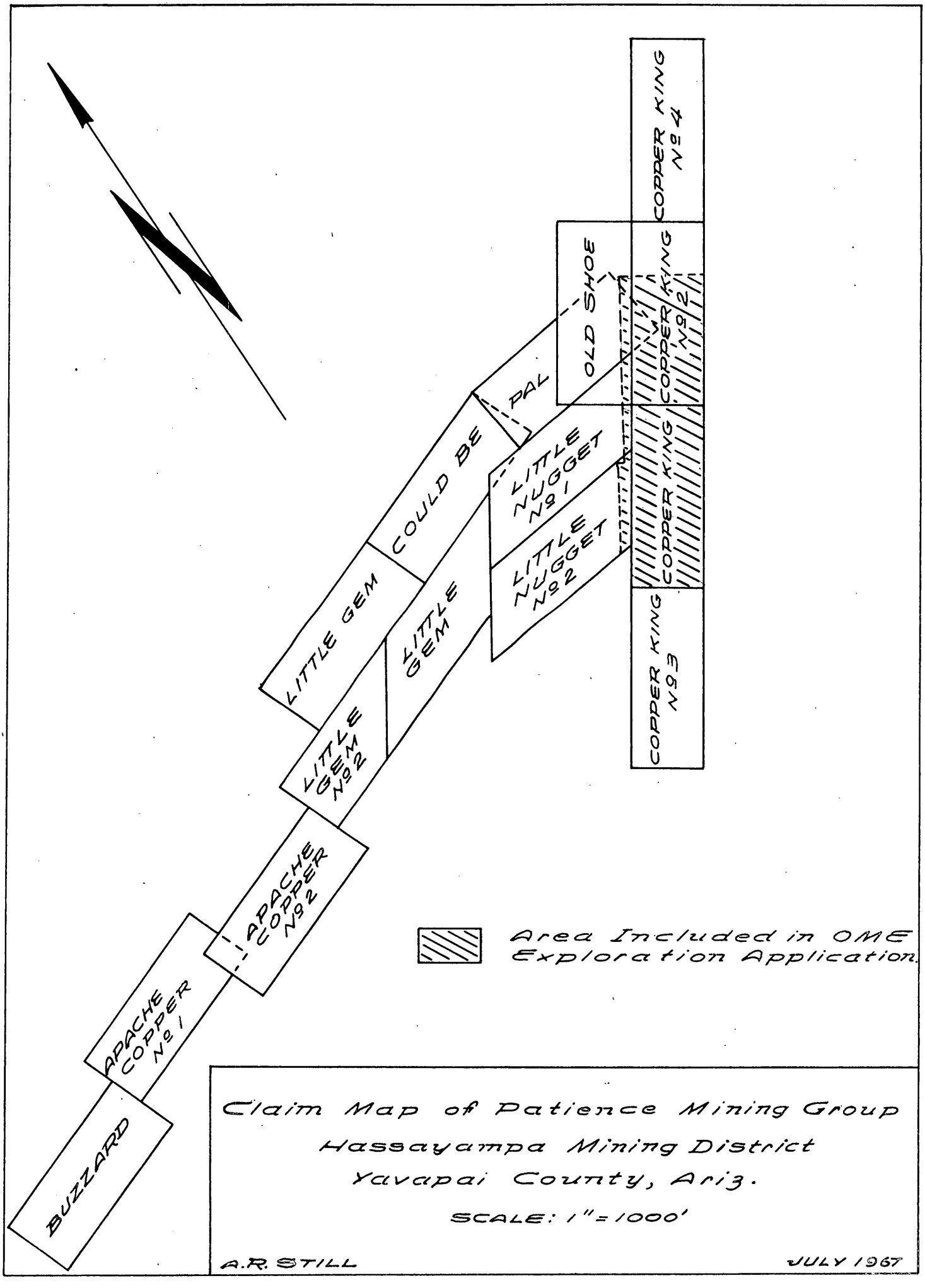
The relative strength, and character, of the mineralization on the property indicates that truly economic grade and size oreshoots can reasonably be expected to occur.

The current lessors of the property (The Triple S Syndicate) are willing to expend additional funds in the further exploration of these target areas. It is their hope that the OME will participate in this exploration endeavor.

Arthur R. Still, Mining Geologist

Prescott, Arizona
July 21, 1967

REGISTERED GEOLOGIST
CERTIFICATE EXPIRES
ARTHUR R. STILL
DEC. 31. 1967
ARIZONA, U.S.A.



Claim Map of Patience Mining Group
Hassayampa Mining District
Yavapai County, Ariz.

SCALE: 1" = 1000'

A.R. STILL

JULY 1967

PLATE I

TRIPLE "S" MINE - 1966 SAMPLING

Sample No.	Width	Au	Ag	% Cu	Remarks
1710	30"	0.02	Tr	0.32	Pyritic vein on main adit level
1711	grab	-	-	0.92	Chalcocite in walls, raise Drift at 12-14'
1712	grab	0.05	0.2	10.10	Clusters of cc & cp in gossan (up to 10" nodules)
1719	14"	0.01	Tr	1.58	Pyrite w/minor cp, face at 57'
1720	12"	-	-	2.51	Dense cp gossan w/some vis. cp @ 57'
1721	10"	-	-	2.60	Pyritic vein, some cp & gossan @ 52'
2181	car sample (grab)	-	-	2.60	Drift from 42-47'
2182	" " "	-	-	0.86	" " 47-52'
2183	" " "	-	-	0.64	" " 52-57'
1722	24"	0.01	0.5	9.48	Face at 67½ ft.
1723	18"	0.02	0.3	8.58	Face at 73 ft.
2184	12"	0.01	Tr	5.64	Face at 78 ft.
2185	36"	-	-	4.76	Face at 60 ft.

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still + Still DATE 9-22-62

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	C-1	TR.	0.2					1.85
	C-2	.01	0.2					1.82
	C-3	.02	1.2					3.72

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 10-6-62

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	T.S. #1 FW@Portal							0.55
	T.S. #2 HW@Portal							0.50
	T.S. #4 2½' FW@5' in	TRACE	0.10			2.25		1.00
	T.S. #5 3½' HW@5' in	TRACE	0.40					3.15

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 10-11-62

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Sample T-6 3½ ft FW of fault @ 26 ft							1.05
	" T-7 22 ft HW of v @ 25'							6.15

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still + Still DATE 10-16-62

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	T-8							0.45
	T-9							0.60
	T-10 4' GOSSAN - UPPER ADIT OUTCROP							2.0
	Charges $4.50							

REGISTERED ASSAYER CERTIFICATE ... CHARLES G. STATLER

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 11-6-62

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	T-11							3.85
	Fault where it crosses upper road							

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 11-27-62

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	T-12	.03	0.30					4.85
	T-13	.05	1.90					21.90

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 5-15-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Muck Sample 145-148 ft							0.80
	Chg. #10.50							

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 5-28-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Chg. #10.75							
	T-20							0.72
	T-21							0.46
	T-22							0.6[illegible]
	T-23							0.36
	T-24 A							0.34
	T-25 A	.01	Nil					0.84
	Charge #10.75							

REGISTERED ASSAYER ARIZONA U.S.A.

SHATTUCK DENN MINING CORPORATION
Iron King Branch
ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 7-6-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Sta #1 Sample A 0'-6'							0.22
	" " B 6'-7.5'							0.08
	" " C 7.5'-9.5'							0.06
	" " D 9.5'-11.0'							0.01
	" " E 11.0'-12.0'							0.06

SHATTUCK DENN MINING CORPORATION
Iron King Branch
ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 7-18-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	2 RN							1.58
	3 RN							1.78

SHATTUCK DENN MINING CORPORATION
Iron King Branch
ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 7-19-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	#1 RU							3.84
	#1 FW							1.90

SHATTUCK DENN MINING CORPORATION
Iron King Branch
ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 7-23-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	#2 RR							2.36

SHATTUCK DENN MINING CORPORATION
Iron King Branch
ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 7-31-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	#345 RR		.02					2.98
	Charges #300							

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 8-8-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	# 5-6 RR							2.30

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 11-29-63

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	T-24 Gossan, top of [illegible]	.04	1.7					2.30
	T-25 [illegible]	.02	0.8					6.35
	T-26 " " " " " 12'	TR	0.6					3.35
	T-27 " " " " " 3' imp	TR	0.6					3.05
	[illegible]							

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA A. R. Still DATE 5-28-64

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	# 2260	.14	1.4					0.60
	61	.08	1.2					1.55
	62	.07	1.4					0.68
	63							1.54
	64	.09	1.3					2.14
	65	.04	1.2					1.52

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Still & Still DATE 6-20-64

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	# 75.35							1.84
	(TS-35)							
	Chgt # 1.50							

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA A R. Still DATE 6-24-66

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	# 2266	.01	0.8					5.64

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Art Still DATE 10-6-66

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Sample # 1710	.02	TR					0.32
	# 1711							0.92
	1712	.05	0.2					10.10

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Art Still DATE 10-27-66

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Sample # 1719	.01	TR.					1.58
	" # 1720							2.51
	" # 1721							2.60
	" # 2181							2.60
	" # 2182							0.86
	" # 2183							0.64

SHATTUCK DENN MINING CORPORATION
Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA Art R Still DATE 11-7-66

	DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
	Sample # 1722	.01	0.5					9.48
	1723	.02	0.3					8.58
	2184	.01	TR					5.64
	2185							4.76
	chgd $11.25							

REGISTERED ASSAYER

2M 1-20-60 PPCo. 552—D33

SHATTUCK DENN MINING CORPORATION

Iron King Branch

MINE ASSAY REPORT

CONN

10-31-61

DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
4001	.06	0.3			Nil	Nil	0.80
2	.03	0.9			✓	✓	1.64
3	.02	0.5			✓	✓	0.58
4	.07	0.6			✓	✓	1.78
5	.04	0.4			✓	✓	1.50
6	.01	TR.			✓	✓	5.96
7	.02	TR.			✓	✓	3.72
8	.02	TR.			✓	✓	0.86
9	.01	TR.			✓	✓	1.42
10	.03	0.2			✓	✓	0.48
11	.04	TR.			✓	✓	0.56
12	.02	0.4			✓	✓	1.26
13	.04	0.5			✓	✓	3.76
14	.02	0.3			✓	✓	4.46
15	.05	2.6			✓	✓	1.24

SHATTUCK DENN MINING CORPORATION

Iron King Branch

ASSAY OFFICE

HUMBOLDT, ARIZONA

DATE 11-21-61

DESCRIPTION	Au	Ag		Fe	Pb	Zn	Cu
#4029	.02	0.4					1.35

SAMPLES BY R.G. RAABE - 1961

(see Plates 2,3,4 & 5)

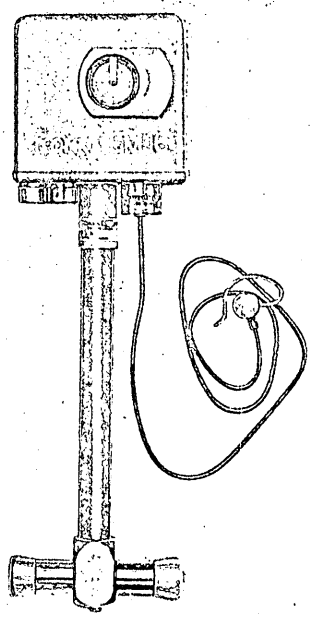
2M 6-61 Mc

ASSAYER

RONKA EM 16

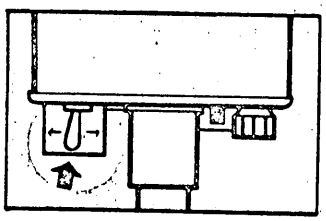
DEEP-PENETRATING

ELECTROMAGNETIC DETECTOR

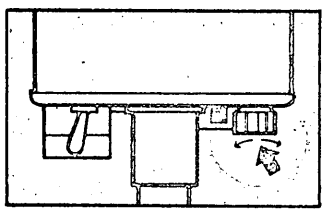


OPERATION

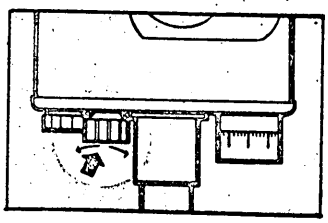
ON-OFF TOGGLE SWITCH
is located on underside of the instrument

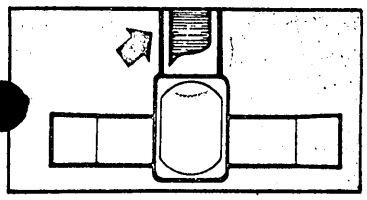


STATION SELECTOR
after selection of 2 VLF stations and insertion of proper plug-in units, knob-rotation pinpoints stations selected

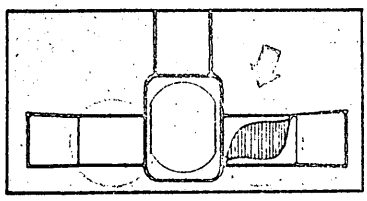


GAIN CONTROL
permits operator to govern the soundlevel of the output signal to the earphone

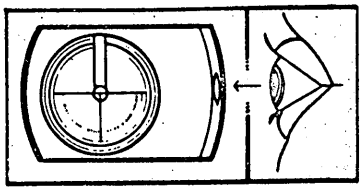




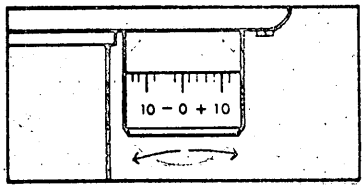
VERTICAL RECEIVING COIL
circuit in instrument stem picks up any vertical signal present



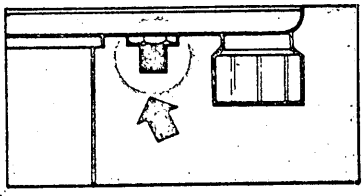
HORIZONTAL RECEIVING COIL
circuit, after automatic 90° signal shift, feeds signal into quadrature dial in series with the receiving circuit



IN-PHASE DIAL
measures the degree of instrument-tilt from vertical position to produce minimum signal. Instrument-tilt angle equals tilt-angle of total field



QUADRATURE DIAL
is calibrated in per cent. markings and measures quadrature signal



BATTERY TEST BUTTON
is pushed in after unit is switched on and produces a clear sound when batteries are usable

ADVANTAGES

ONE-MAN-OPERATION: surveys are completed in less time, with less personnel. Line-cutting necessity is reduced to minimum. **LIGHTWEIGHT:** easily portable — only 2½ pounds. **RUGGED:** Structural simplicity makes the instrument impervious to the normal stress of survey work. **LOW OPERATING COST:** battery replacement is the only cost. **DEEP PENETRATION:** EM 16 exceeds other EM instruments for depth penetration.

XERO COPY XERO COPY XERO COPY XERO COPY

SPECIFICATIONS

PRIMARY FIELD
Horizontal from any selected VLF transmitting station

FREQUENCY RANGE
Approximately 15 - 25 kHz

STATION SELECTION
Furnished plug-in units and knob on front panel pin-point stations selected

MEASURED FIELD
Vertical field, inphase and quadrature components

ACCURACY OF READINGS
± 1% resolution

RANGE OF MEASUREMENTS
Inphase ± 150% or ± 90°
Quadrature ± 40%

OUTPUT READING
Null-detection by earphone, real and quadrature components from mechanical dials

BATTERIES
(6) size AA penlight batteries
Operational life: 200 hours

SIZE
16 x 5.5 x 3.5 inches
(42 x 14 x 12 cm)

WEIGHT
2.4 lbs. (1.1 kg)

ACCESSORIES
(1) earphone and cord
(1) carrying bag
(1) set of batteries
(3) plug-in units for station selection — additional optional units available
(1) Manual of Operation

DESIGN INTENT

EM 16 is a deep-penetrating electromagnetic detector designed specifically for one-man operation.

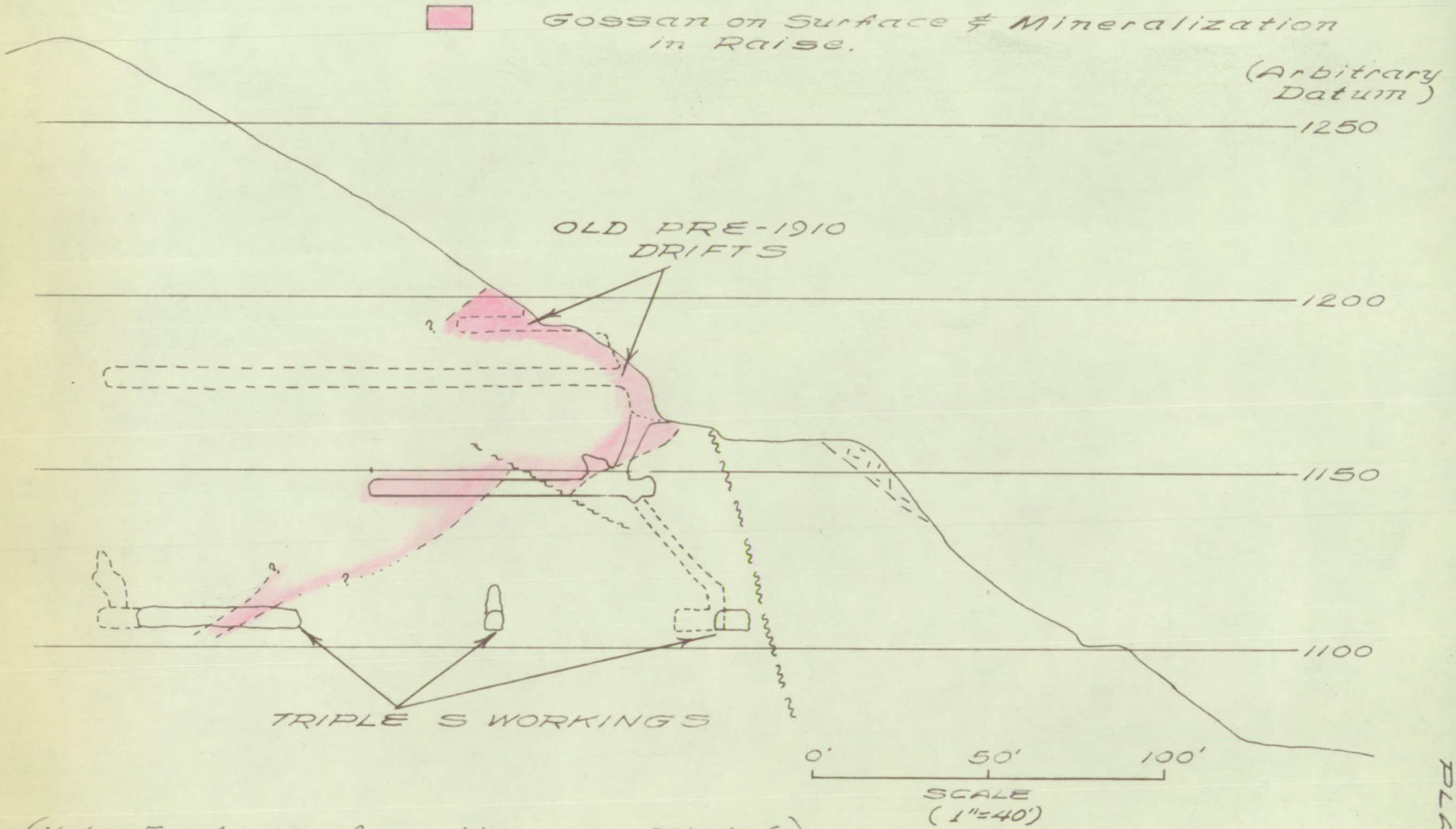
Other instruments must incorporate portable transmitters to generate the necessary primary alternating field to agitate the ore-body sought, then the secondary field, generated by eddy-currents in the conductive targets must be measured by the receiver.

EM 16 is designed to act as receiver only: it utilizes the primary fields generated by the new VLF stations established for marine communication and since these stations have vertical antenna-current, the primary alternating field available is horizontal.

EM 16 simply measures the vertical field components in terms of the horizontal field present.

By using the different stations available, the most suitable direction of primary field for each area being surveyed can be selected.

By measuring the inphase and quadrature components of the vertical secondary field, characteristics of the conductor become apparent.



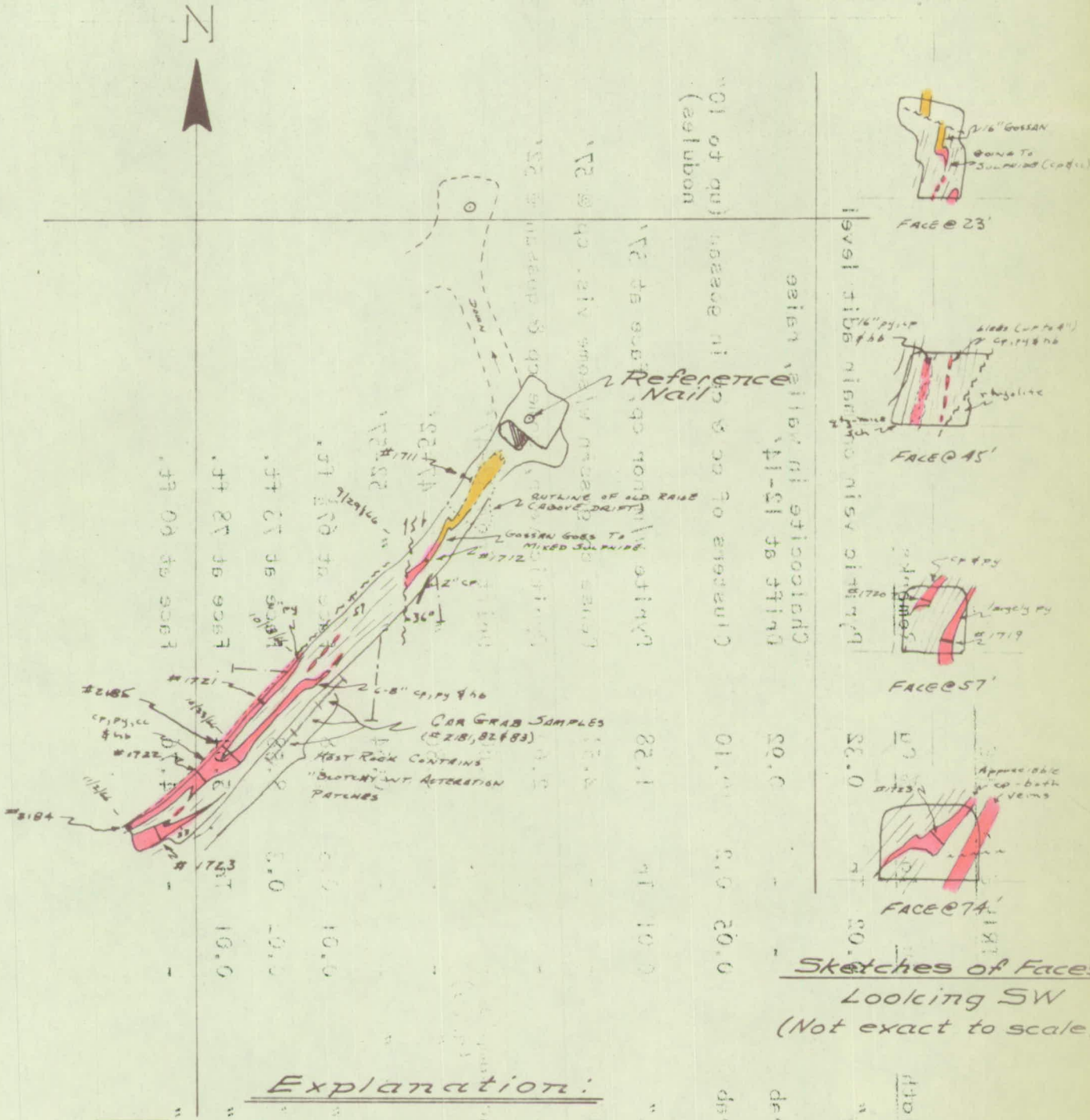
(Note: For trace of section see Plate 6.)

SECTION A-A'
N34°E VERTICAL LONGITUDINAL SECTION
THROUGH TRIPLE S MINE WORKINGS

A.R. Still

Date: Aug. 11, '66
Rev. July 25, '67

PLATE 8



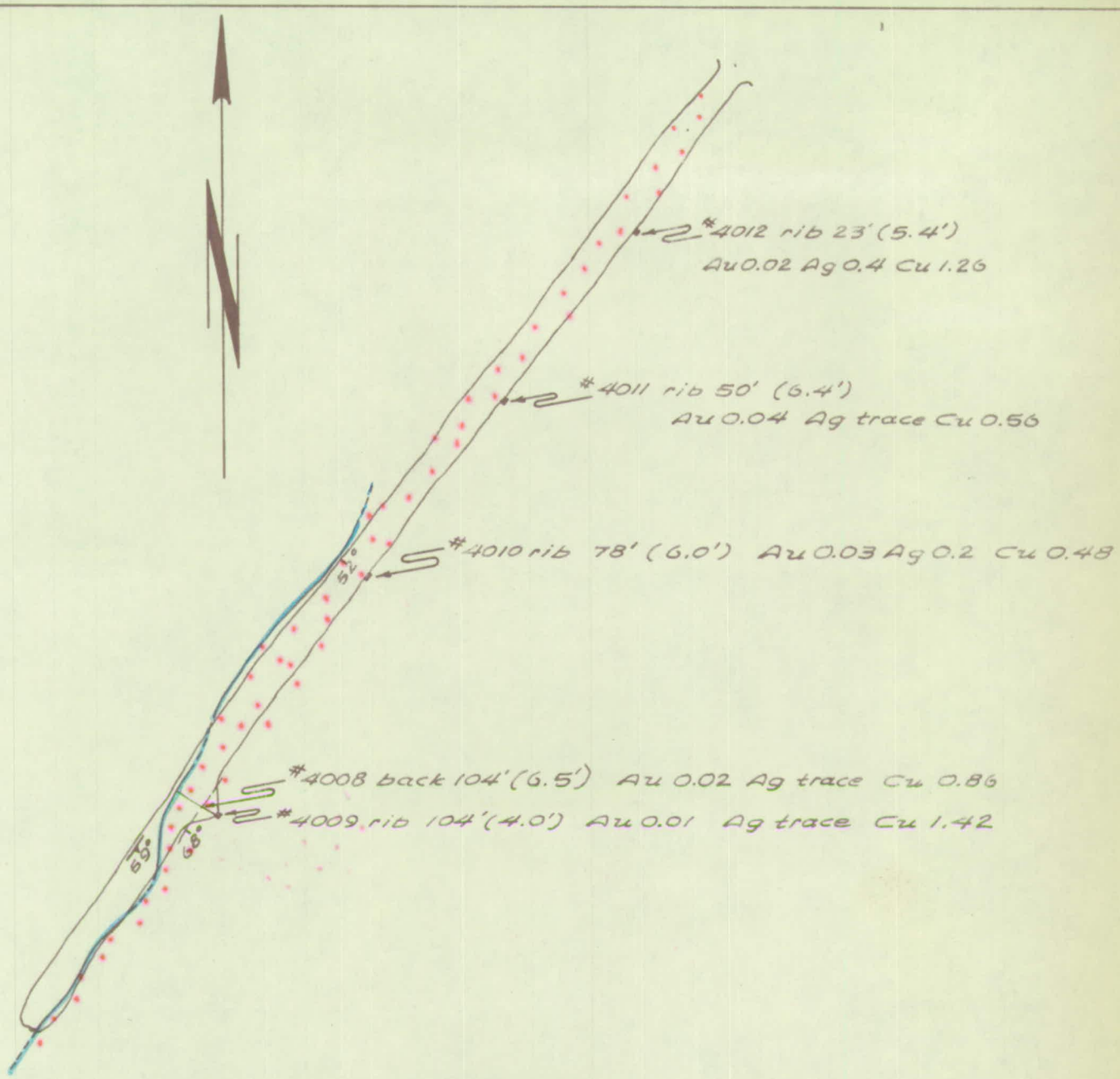
Sketches of Faces
Looking SW
(Not exact to scale)

Explanation:

Gossan
Mixed Gossan & Sulphides
Sulphides (Pyrite & Chalcopyrite)
Fault

TRIPLE "S" MINE
ASSAY & GEOLOGIC PLAN OF
ADIT DRIVEN FROM TOP OF RAISE

A.R.S. 1"=20' 11/20/66



Geologic & Assay Plan

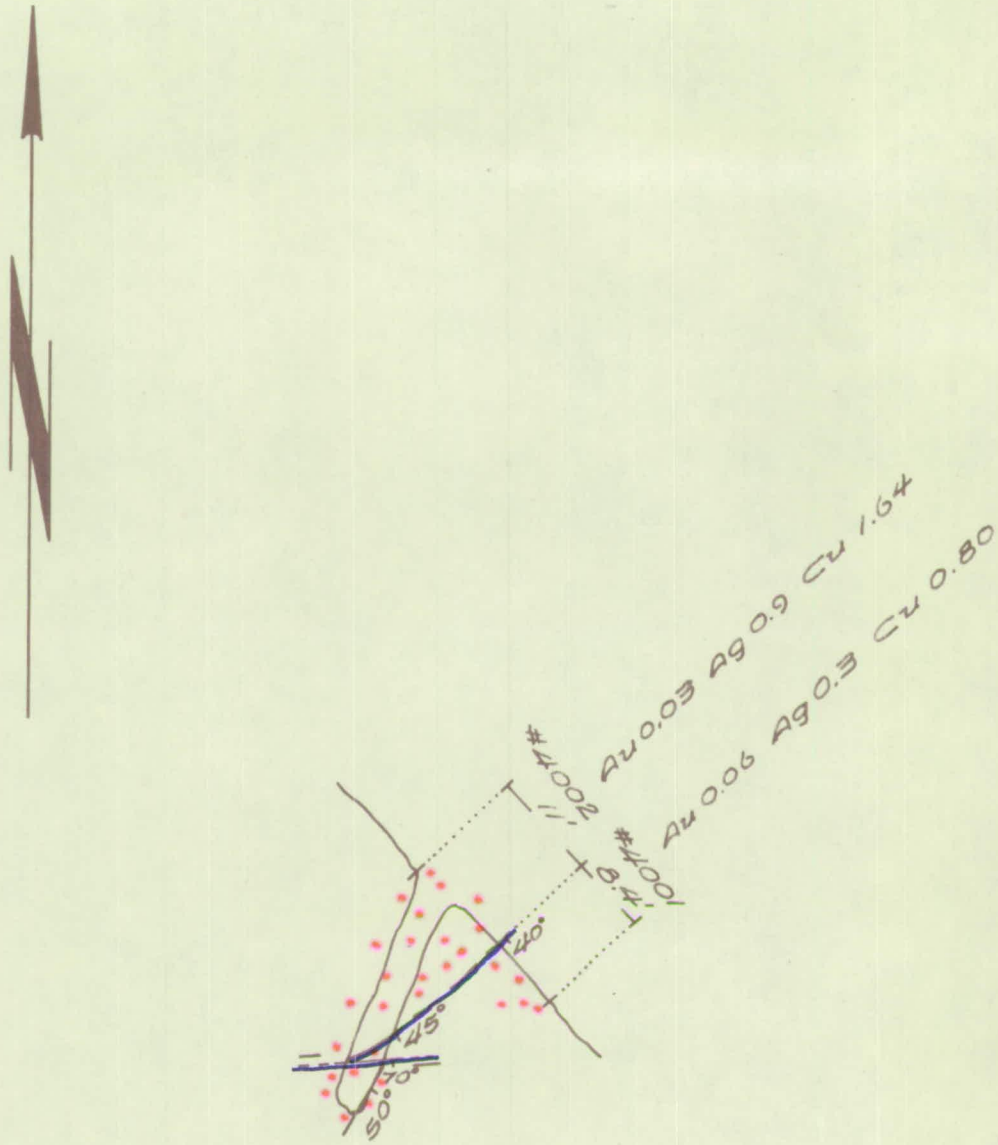
Adit No 2

SCALE: 1" = 20'

AFTER R. G. RAABE
TRACED - B.C.

10/61
JULY '67

PLATE 5



Geologic & Assay Plan

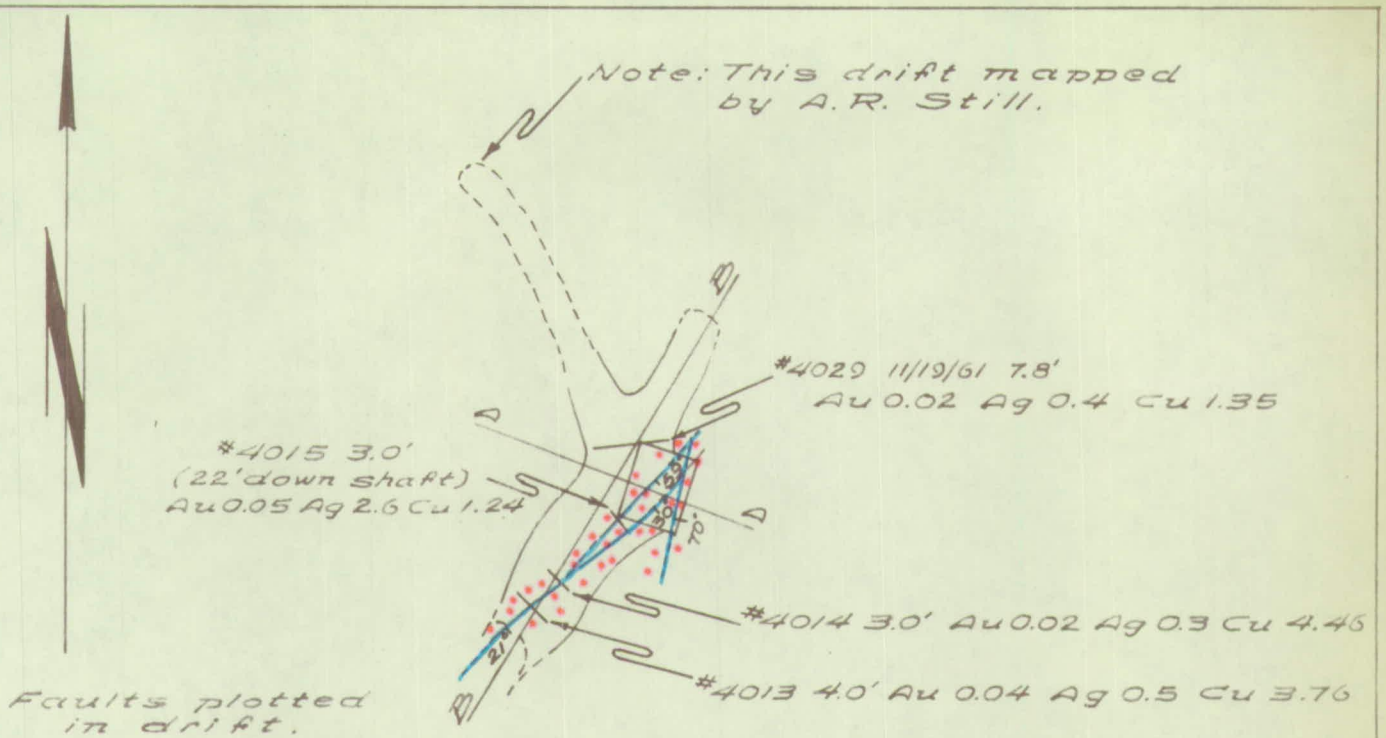
Adit No 1

SCALE: 1" = 20'

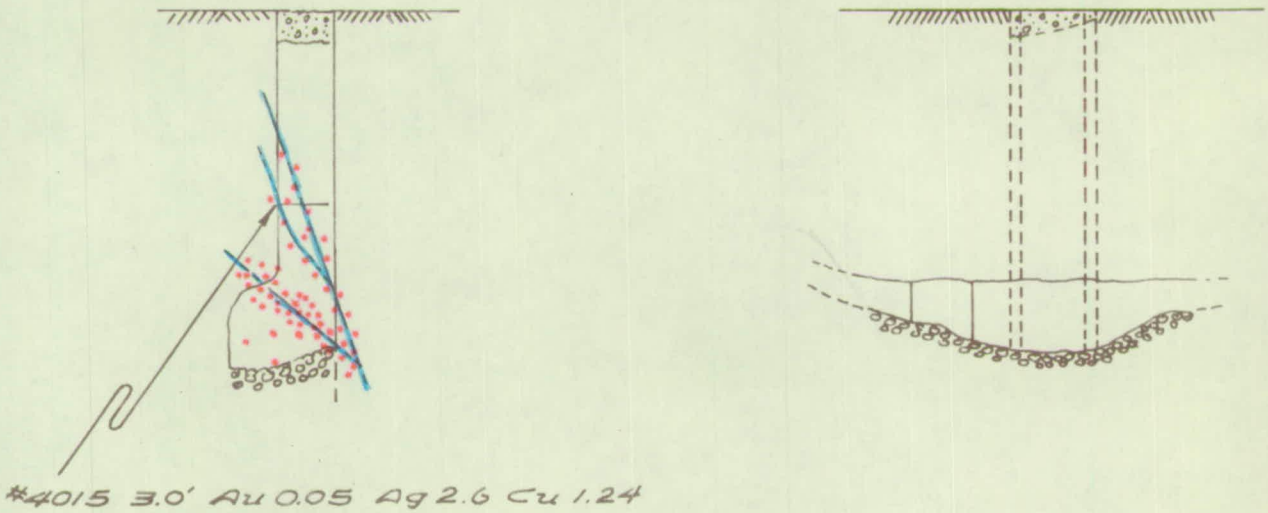
AFTER R. E. RAABE
TRACED - B. C.

10/61
JULY '67

PLATE 4



Plan



Section A-A

Section B-B

Plan & Sections

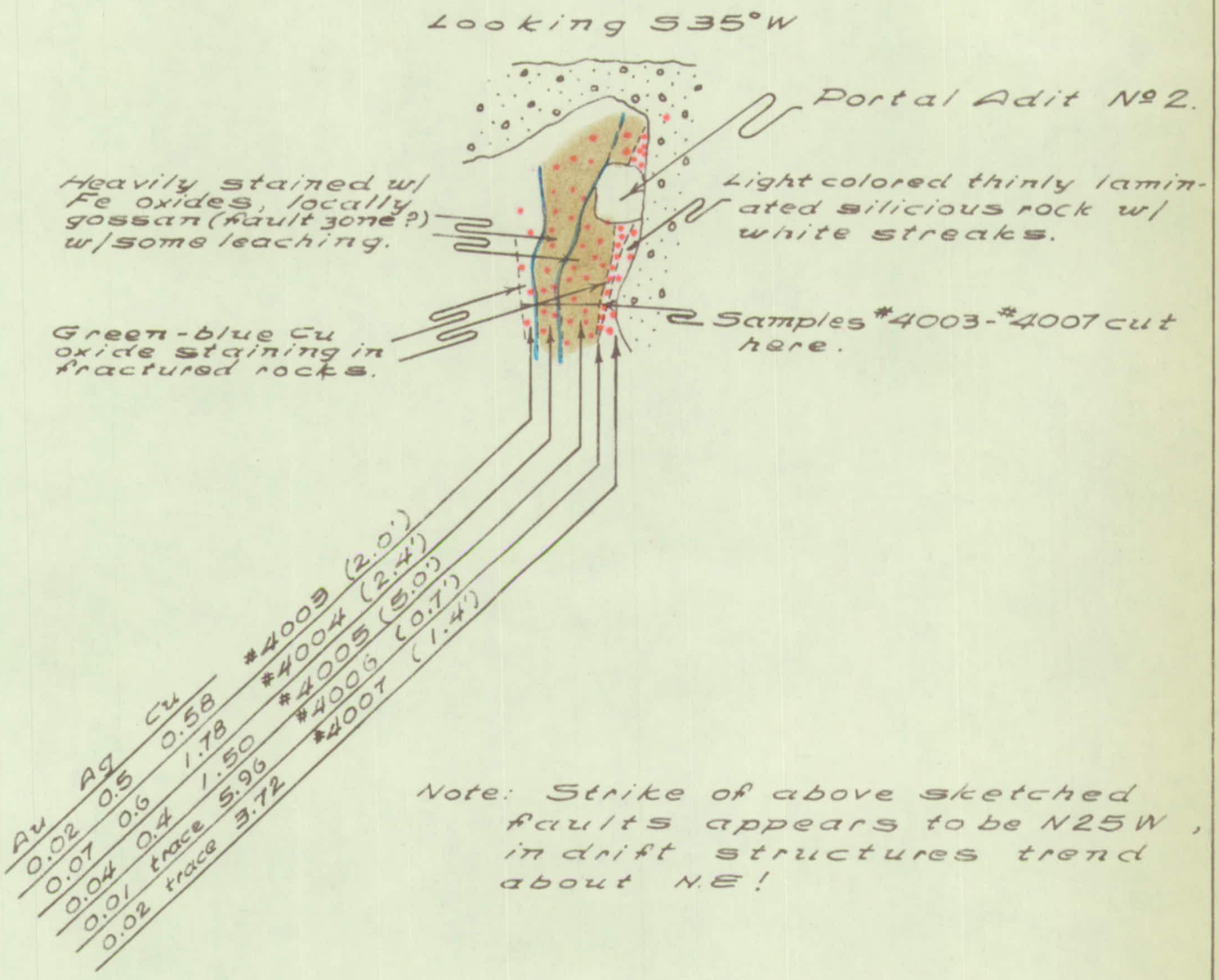
Shaft

SCALE: 1" = 20'

AFTER R.G. RAABE
TRACED - B.C.

10/61
JULY '67

PLATE 3



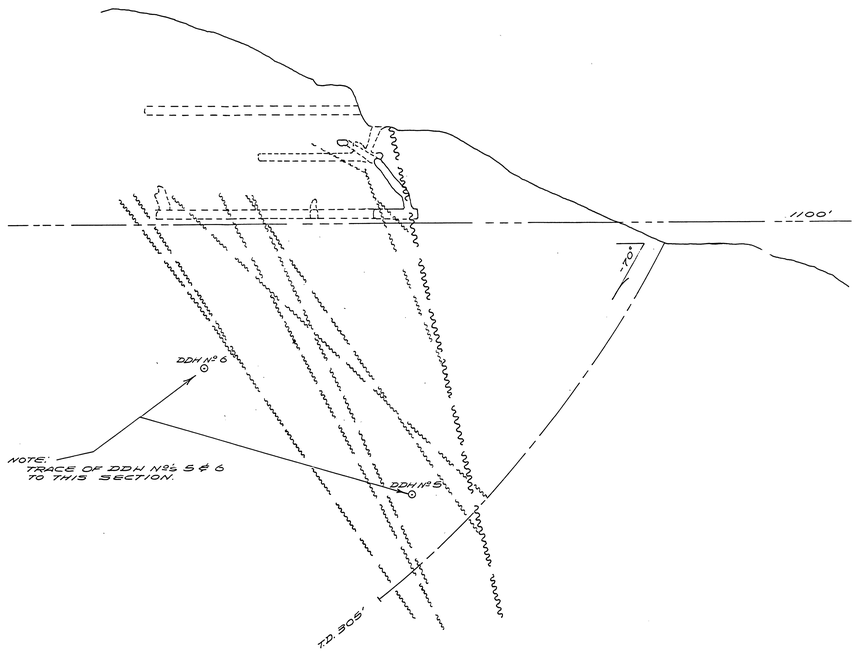
Geologic & Assay Section
of Gossan Outcrop
at Portal of Adit No 2

SCALE: 1" = 20'

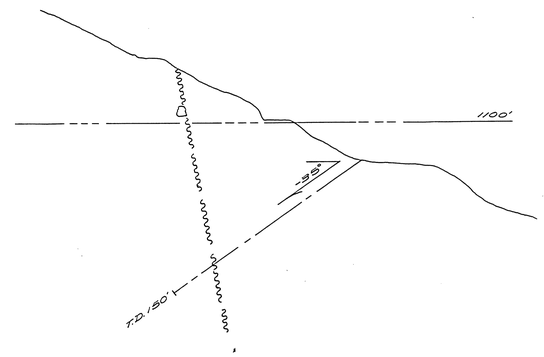
AFTER R. G. RAABE
TRACED - B. C.

10/61
JULY '67

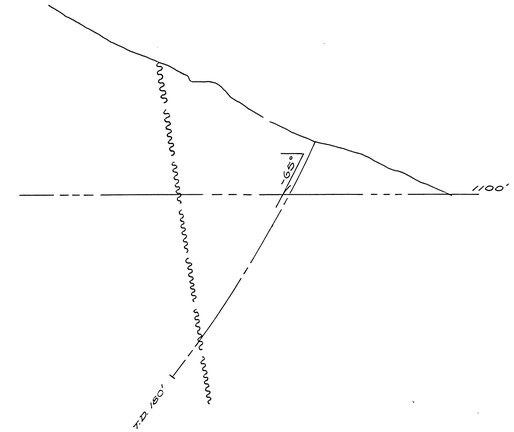
PLATE 2



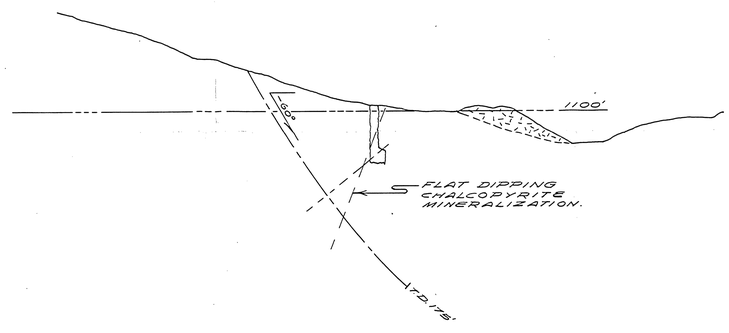
SECTION DDH Nº 1
LOOKING WEST



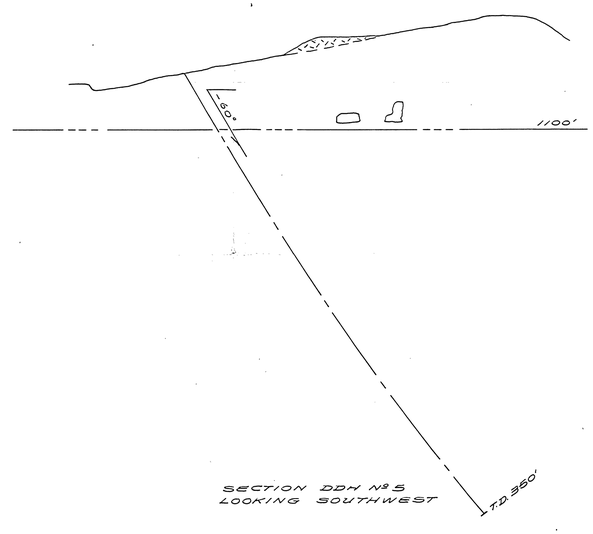
SECTION DDH Nº 2
LOOKING WEST



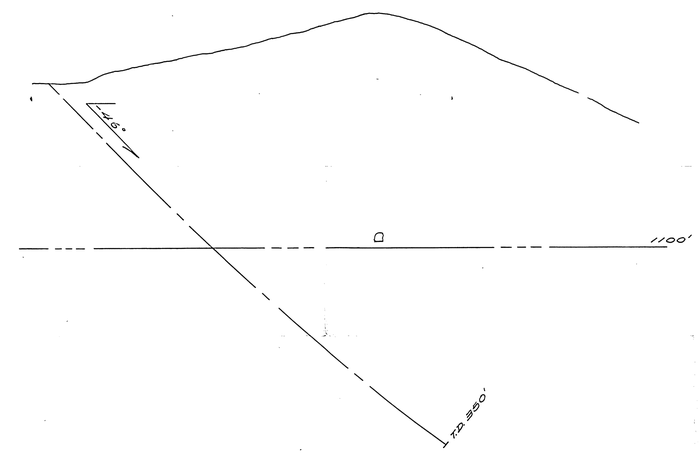
SECTION DDH Nº 3
LOOKING WEST



SECTION DDH Nº 4
LOOKING SOUTHWEST



SECTION DDH Nº 5
LOOKING SOUTHWEST



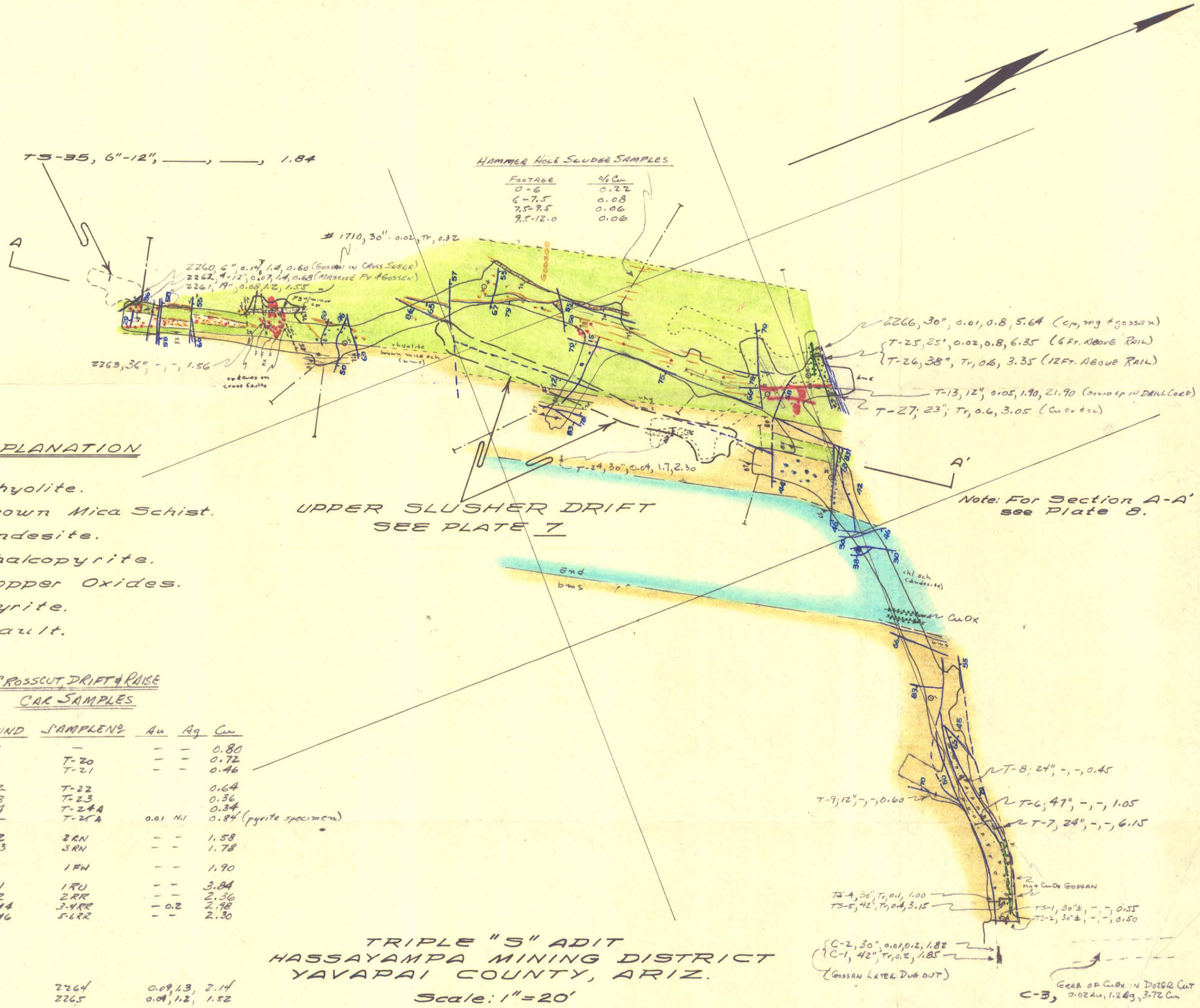
SECTION DDH Nº 6
LOOKING SOUTHWEST

VERTICAL LONGITUDINAL CROSS SECTIONS
PROPOSED DIAMOND DRILL HOLES
THE TRIPLE "S" MINE
HASSAYAMPA MINING DISTRICT
YAVAPAI COUNTY, ARIZONA
SCALE: 1" = 40'

DRAWN BY: A.R.S.
INKED BY: S.C.

DATE: JUNE, '67
REVISED

PLATE Nº 10



Hammer Hole Sludge Samples

Footage	% Cu
0-6	0.22
6-7.5	0.08
7.5-9.5	0.06
9.5-12.0	0.06

EXPLANATION

- Rhyolite.
- Brown Mica Schist.
- Andesite.
- Chalcopyrite.
- Copper Oxides.
- Pyrite.
- Fault. (60)

UPPER SLUSHER DRIFT
SEE PLATE 7

Note: For Section A-A' see Plate 8.

Crosscut, Drift & Raise Car Samples

Area	Round	Sample No.	Au	Ag	Cu
XC in Cp	1	—	—	—	0.80
	2	T-20	—	—	0.72
	3	T-21	—	—	0.46
So Drift	2	T-22			0.64
	3	T-23			0.36
	4	T-24A			0.34
	—	T-25A	0.01	N.I	0.84 (pyrite specimen)
N. Drift	2	2RN	—	—	1.58
	3	3RN	—	—	1.78
Bell out for Raise		1FW	—	—	1.90
Raise	1	1RU	—	—	3.84
	2	2RR	—	—	2.36
	3&4	3-4RR	—	0.2	2.98
	5&6	5-6RR	—	—	2.30
Ore Pile	—	2264	0.09	1.3	2.14
		2265	0.04	1.2	1.52

TRIPLE "S" ADIT
HASSAYAMPA MINING DISTRICT
YAVAPAI COUNTY, ARIZ.

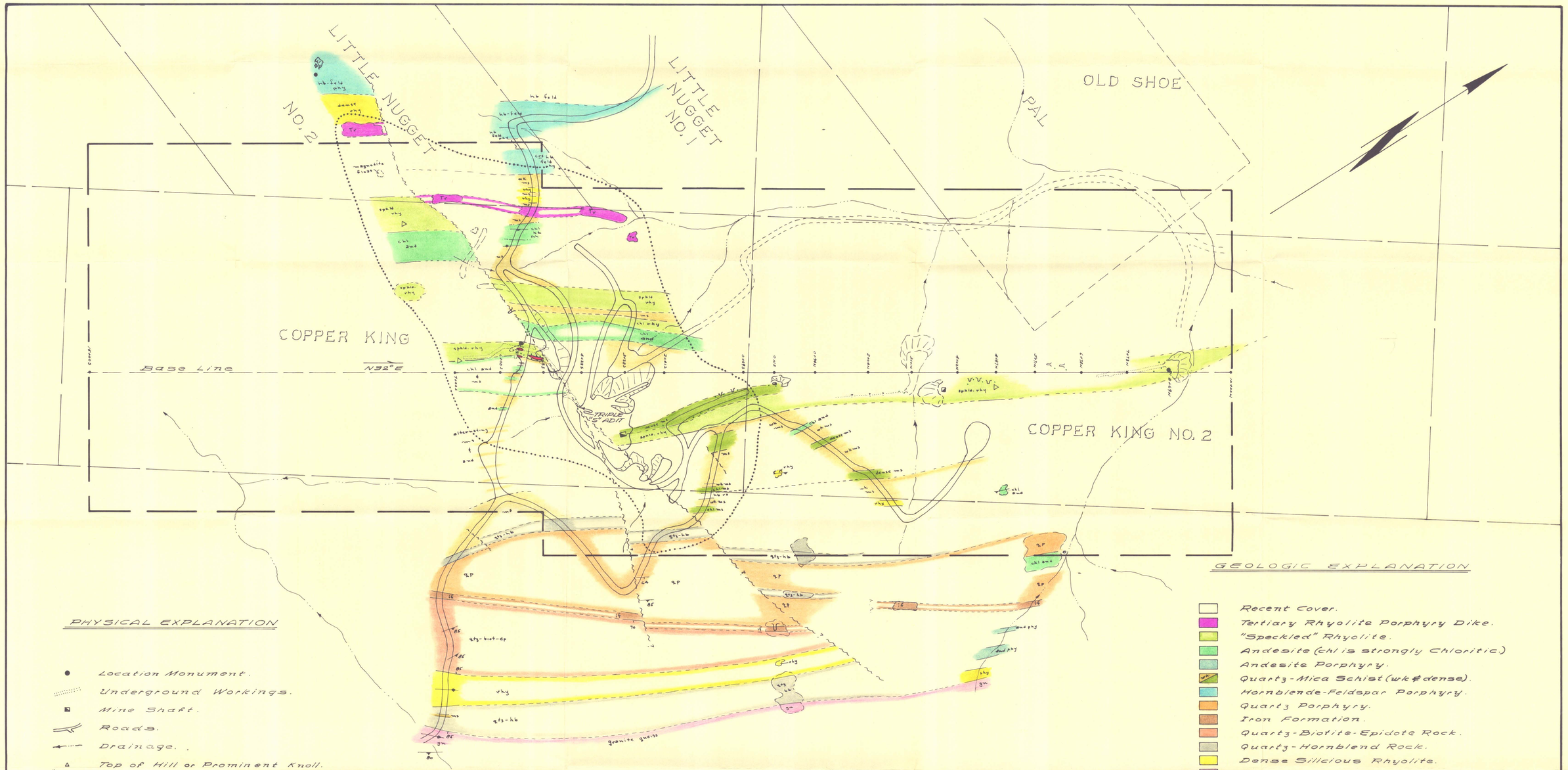
Scale: 1" = 20'

Geology by } A.R.S.
Drawn by }

Date - 6-30-64
Rev. — 11-66

Note: Assay Data is - Sample No.; Width; Au; Ag; Cu.

PLATE 6



PHYSICAL EXPLANATION

- Location Monument.
- Underground Workings.
- Mine Shaft.
- Roads.
- Drainage.
- Top of Hill or Prominent Knoll.
- Area of Detail, Plate 9
- Existing Baseline.
- Ultimate Area of Proposed Geophysical (EM) Survey.

Note: Geology Origionally Mapped on 1" = 200' Aerial Photographs. Drainage Pattern Taken from Aerial Photographs.

PORTION OF PATIENCE GROUP

TRIPLE S MINE — EXPLORATION AREA

HASSAYAMPA MINING DISTRICT, YAVAPAI COUNTY, ARIZONA

Scale: 1" = 100'

Geology by A.R.S. June 1967

GEOLOGIC EXPLANATION

- Recent Cover.
- Tertiary Rhyolite Porphyry Dike.
- "Speckled" Rhyolite.
- Andesite (chl is strongly Chloritic)
- Andesite Porphyry.
- Quartz-Mica Schist (wk & dense).
- Hornblende-Feldspar Porphyry.
- Quartz Porphyry.
- Iron Formation.
- Quartz-Biotite-Epidote Rock.
- Quartz-Hornblend Rock.
- Dense Silicious Rhyolite.
- Granite Gneiss.
- Fault.
- Gossan After Massive Sulphides.
- Copper Oxides.

PLATE 11

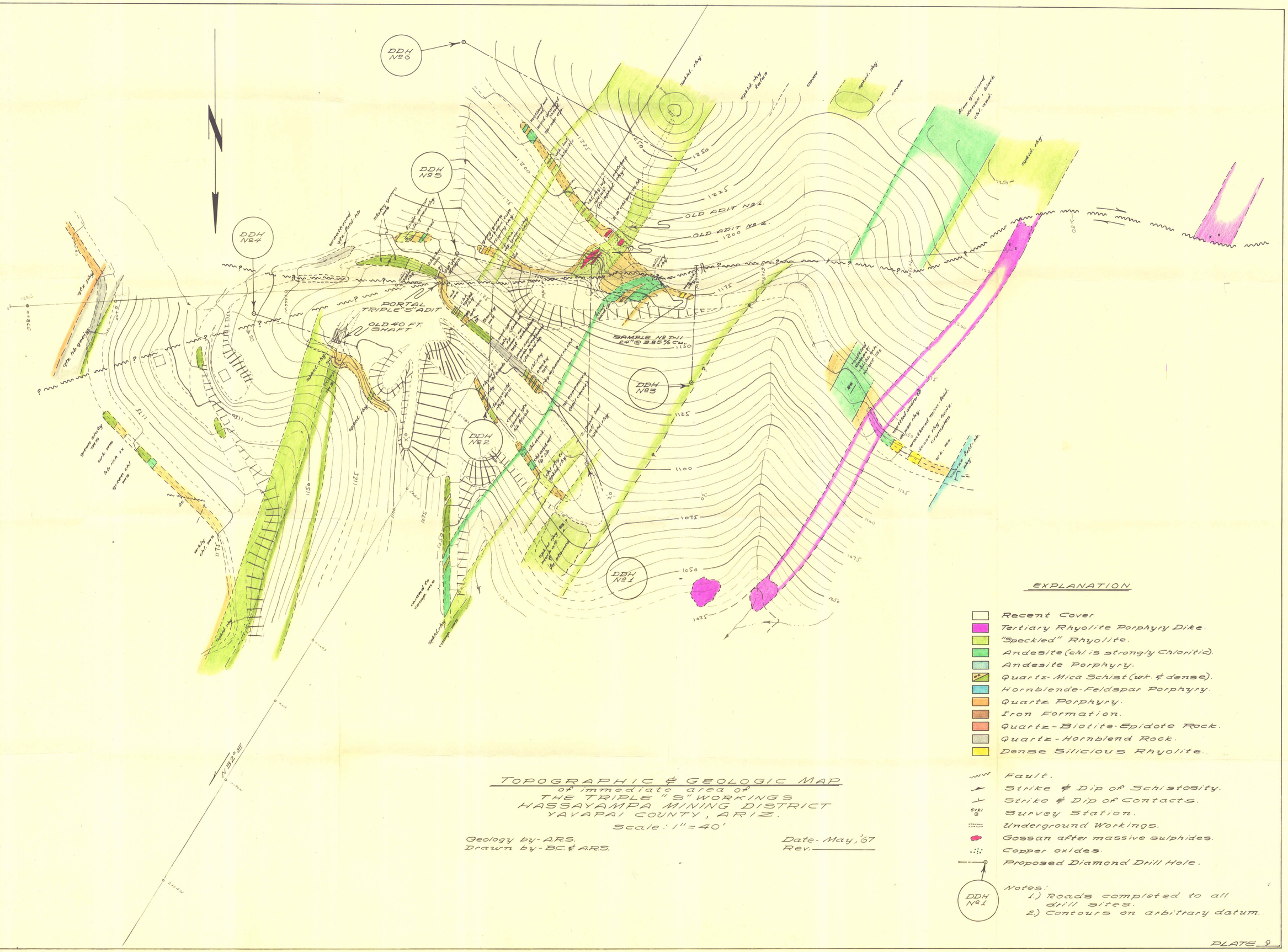

DDH №6
DDH №5
DDH №4
DDH №3
DDH №2
DDH №1
OLD ADIT №1
OLD ADIT №2
PORTAL TRIPLE "S" ADIT
OLD 40 FT. SHAFT
SAMPLE №T-11
2'4" @ 3.85% Cu
N 32° E
EXPLANATION
Recent Cover
Tertiary Rhyolite Porphyry Dike.
"Speckled" Rhyolite.
Andesite (chl is strongly Chloritic).
Andesite Porphyry.
Quartz-Mica Schist (wk. & dense).
Hornblende-Feldspar Porphyry.
Quartz Porphyry.
Iron Formation.
Quartz-Biotite-Epidote Rock.
Quartz-Hornblend Rock.
Dense Silicious Rhyolite.
Fault.
Strike & Dip of Schistosity.
Strike & Dip of Contacts.
Survey Station.
Underground Workings.
Gossan after massive sulphides.
Copper oxides.
Proposed Diamond Drill Hole.
Notes:
1.) Roads completed to all drill sites.
2.) Contours on arbitrary datum.
TOPOGRAPHIC & GEOLOGIC MAP
of immediate area of
THE TRIPLE "S" WORKINGS
HASSAYAMPA MINING DISTRICT
YAVAPAI COUNTY, ARIZ.
Scale: 1" = 40'
Geology by - A.R.S.
Drawn by - B.C. & A.R.S.
Date - May, '67
Rev.

PLATE 9