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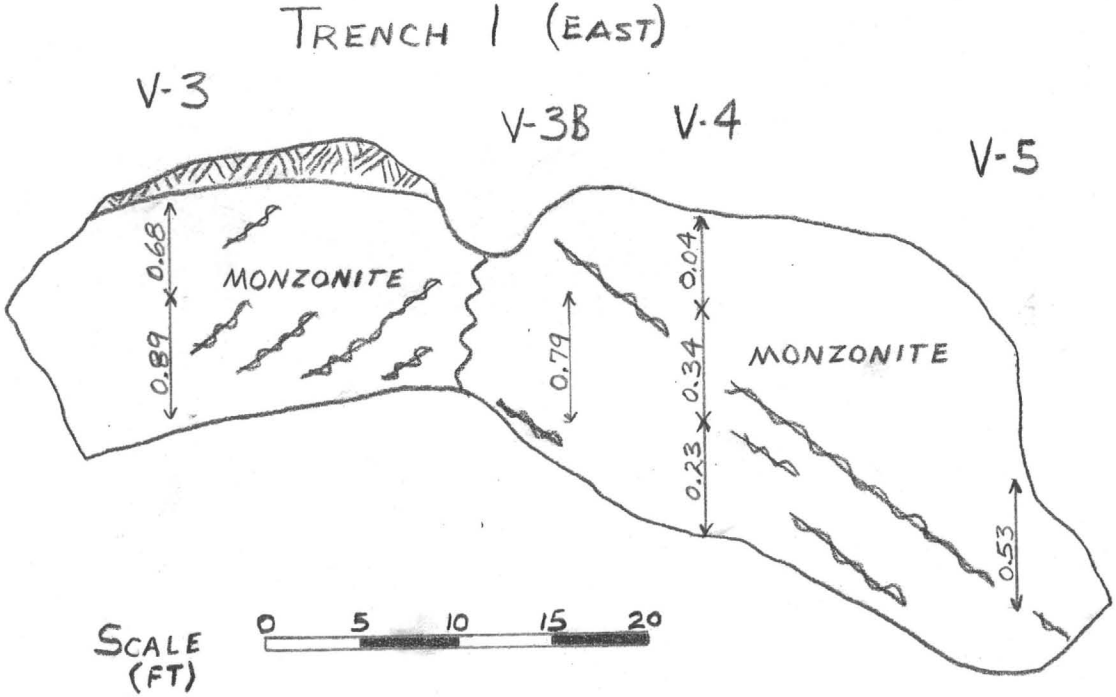
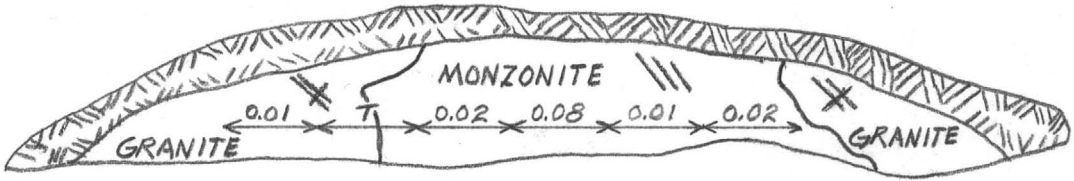

TRENCH 1 (EAST)
V-3
V-3B
V-4
V-5
MONZONITE
MONZONITE
0.68
0.89
0.79
0.04
0.34
0.23
0.53
SCALE (FT)
0
5
10
15
20

TRENCH 4 (WEST)



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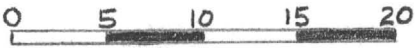

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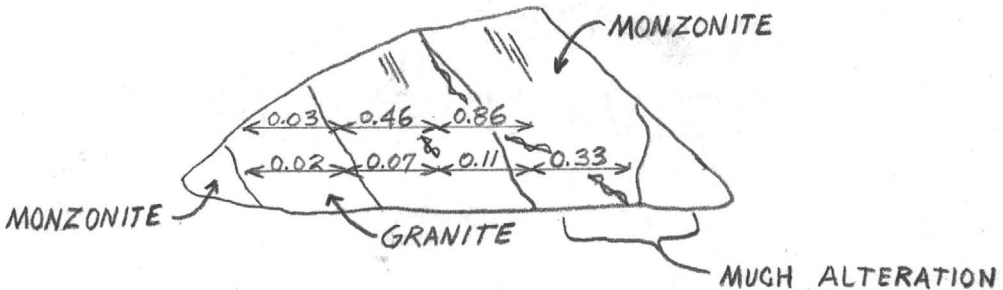

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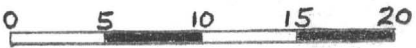
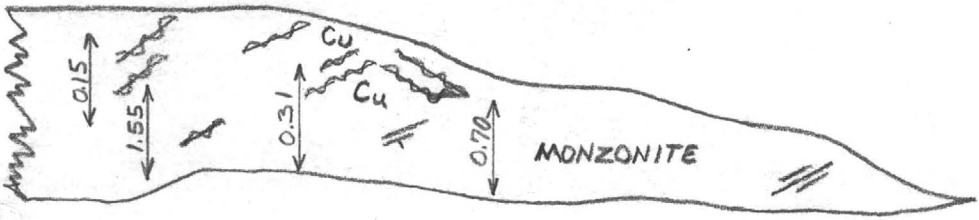


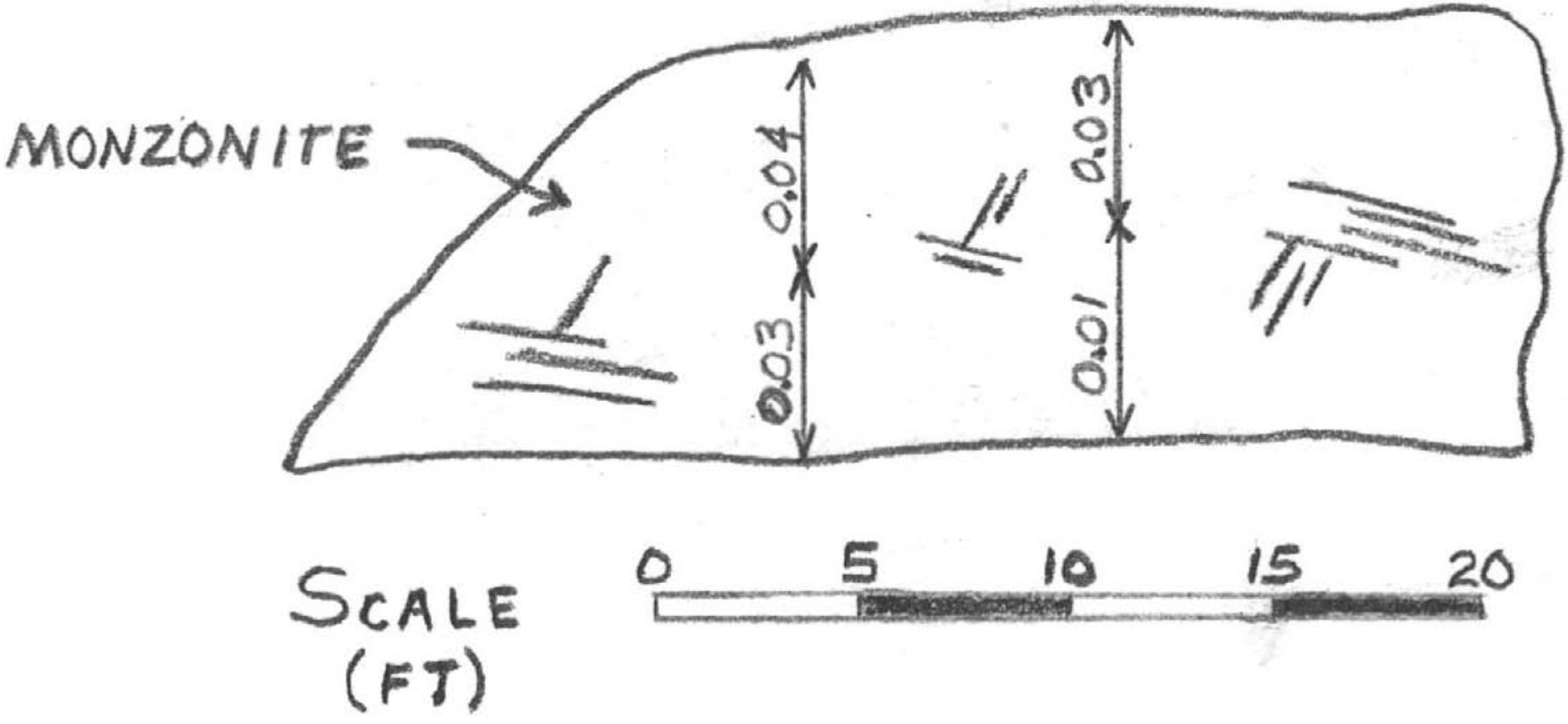
TRENCH 3 (EAST)



SCALE (FT)

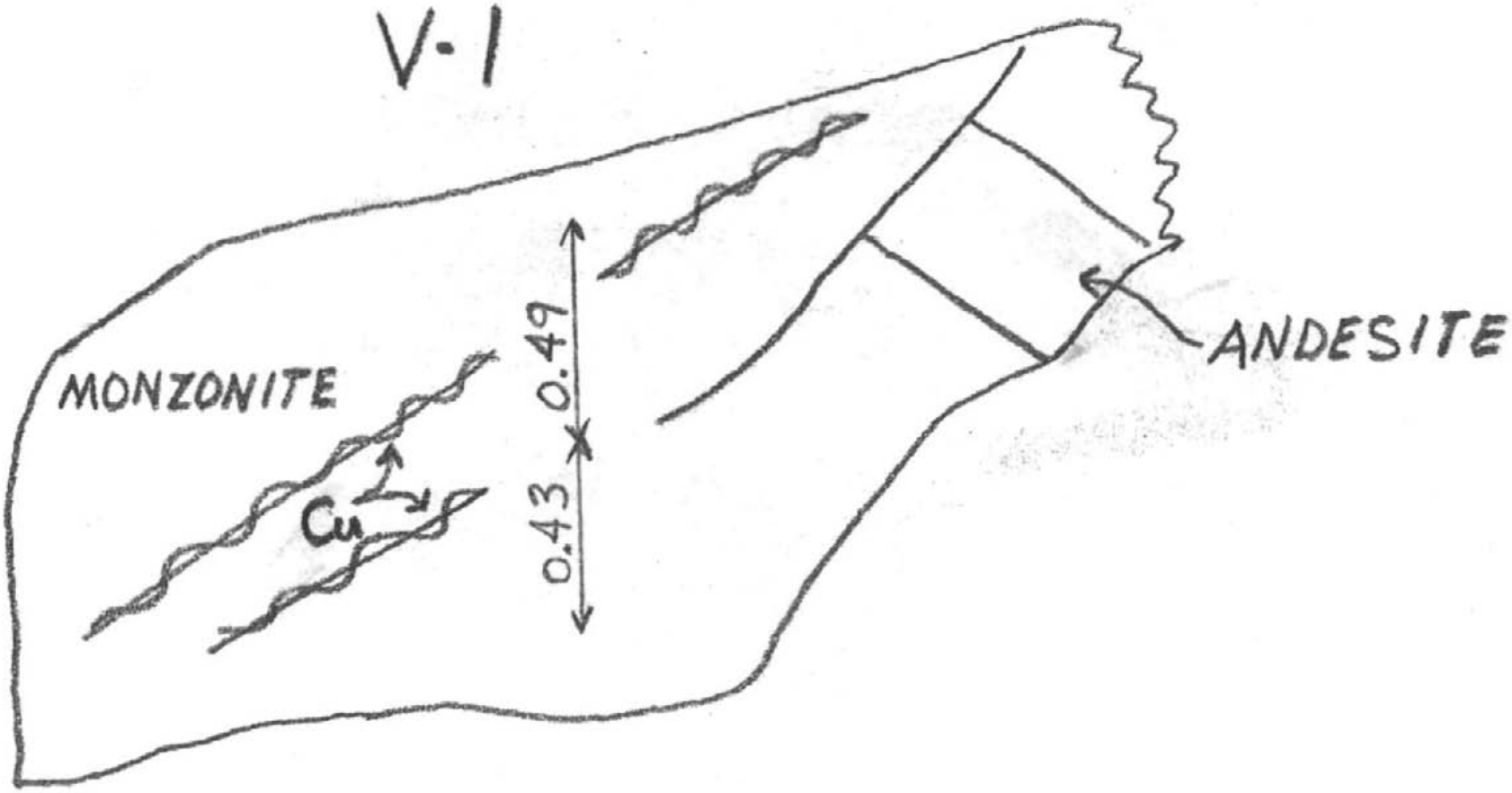
0 5 10 15 20

TRENCH 2 (SOUTH)



TRENCH 1 (EAST)

V-1

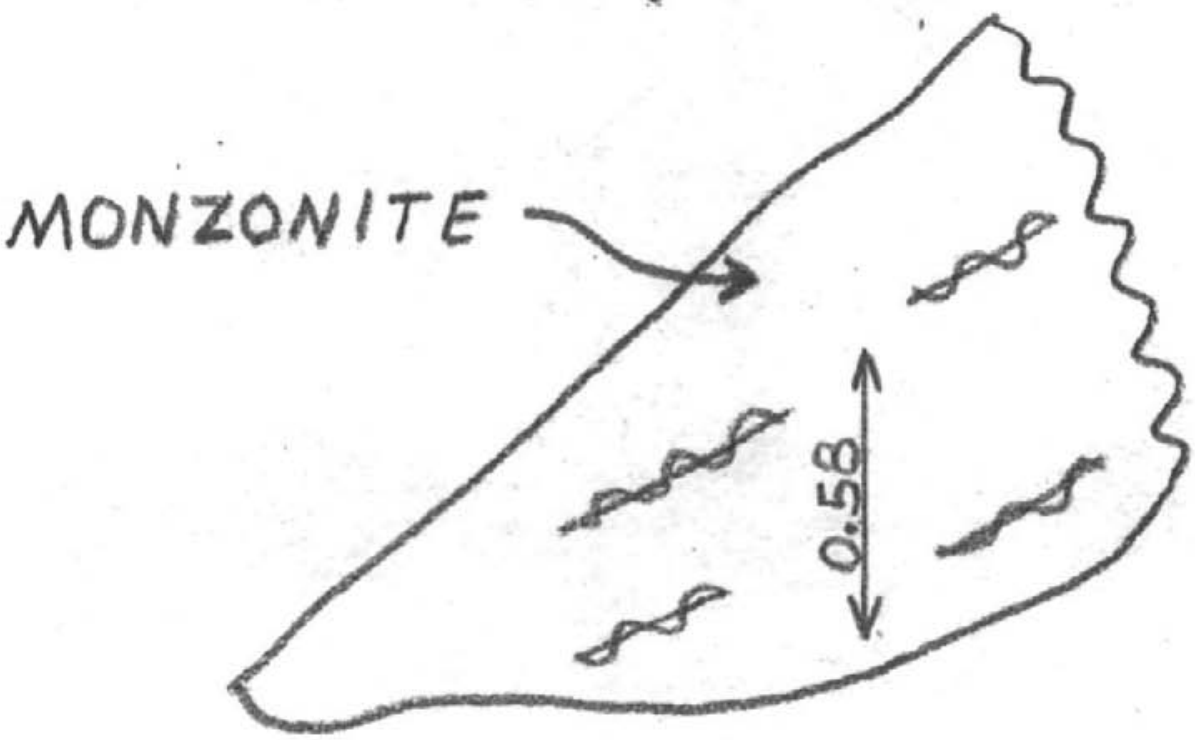


SCALE (FT)

0 5 10 15 20

TRENCH 1 (EAST)

V-2



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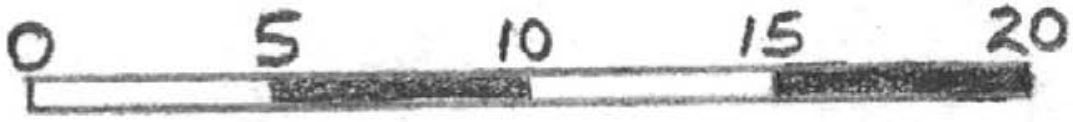

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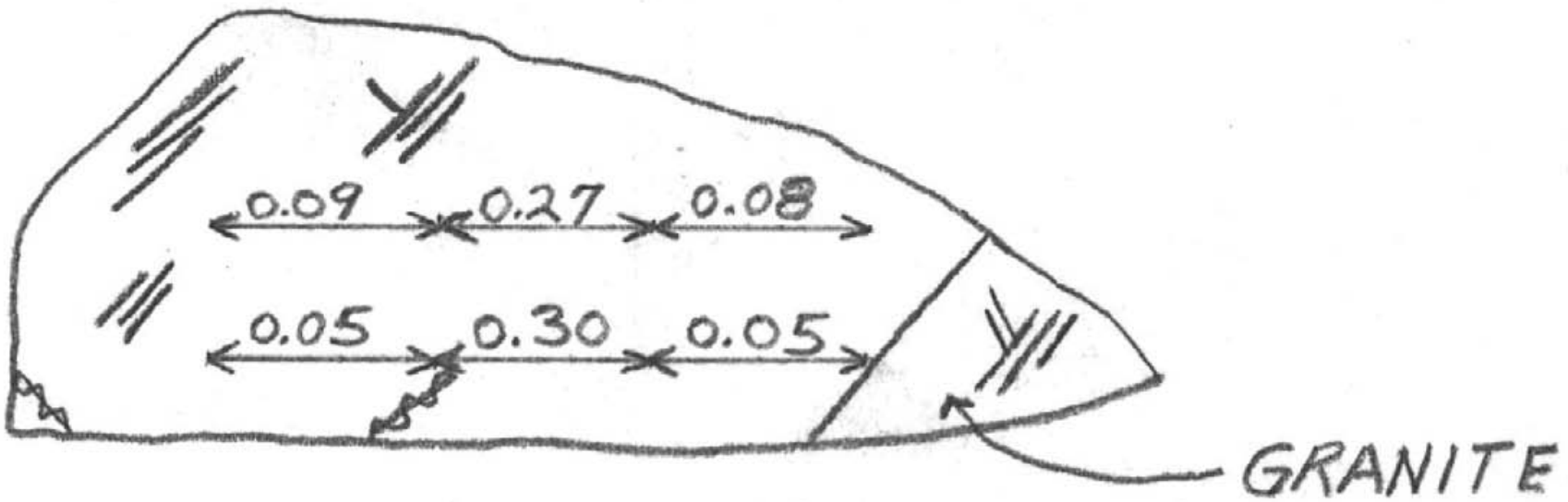
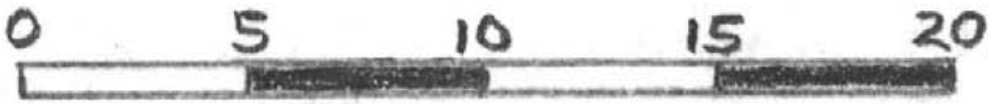


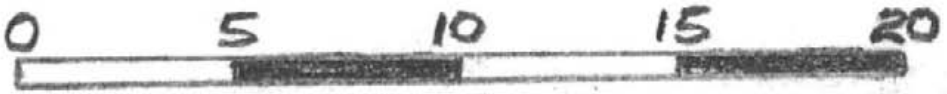
HIGHLY FRACTURED,
MUCH ALTERATION

SCALE (FT)



TRENCH 7 (SOUTH)

SCALE (FT)



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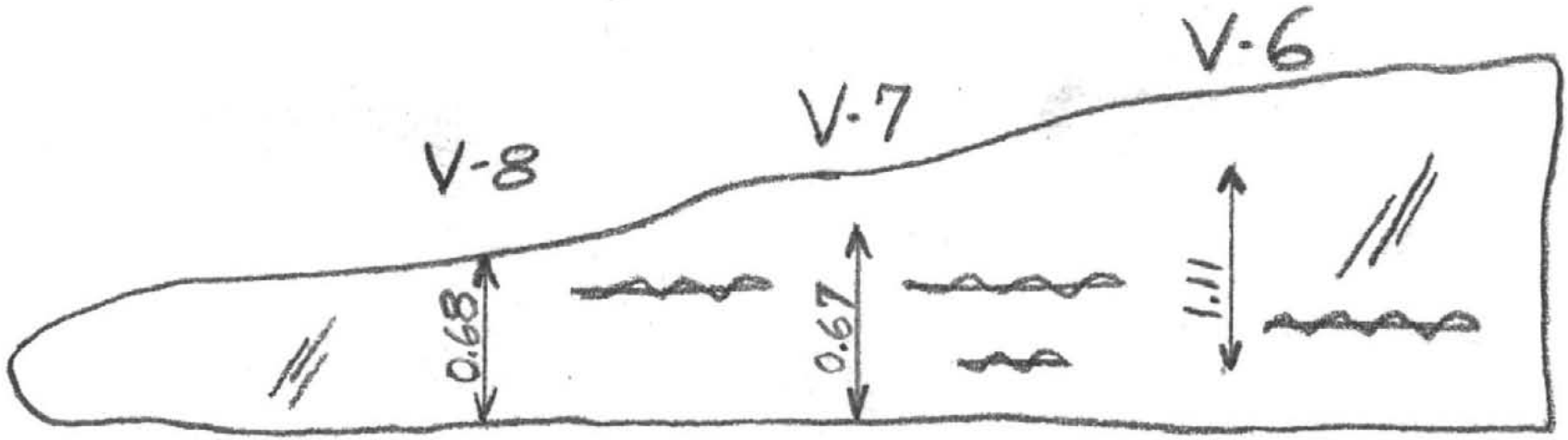

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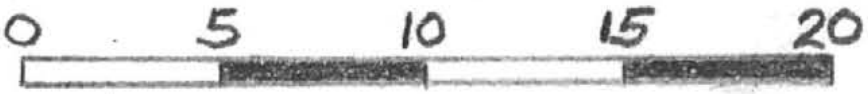

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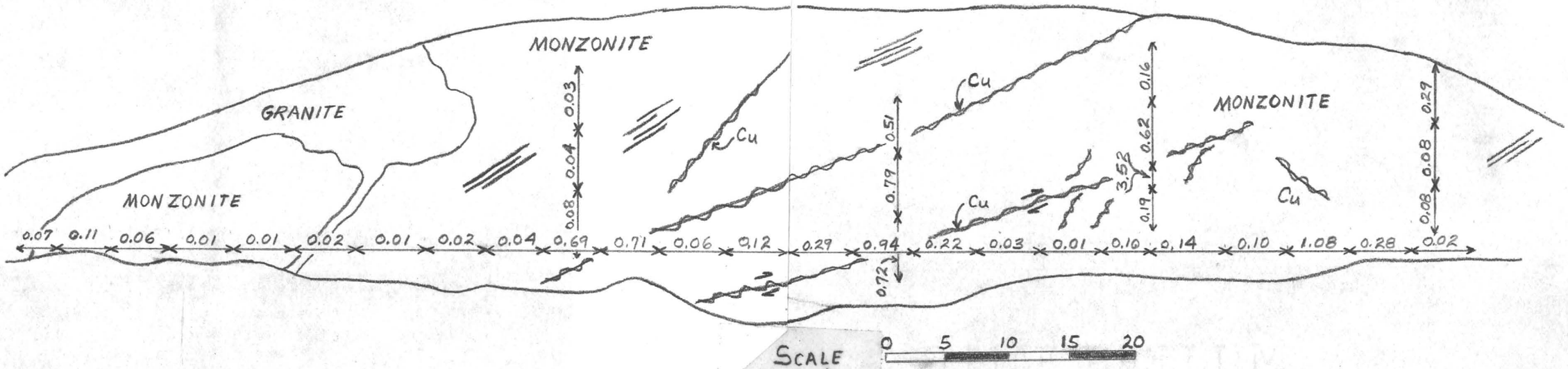
TRENCH 6 (WEST)

TRENCH 6 (WEST)



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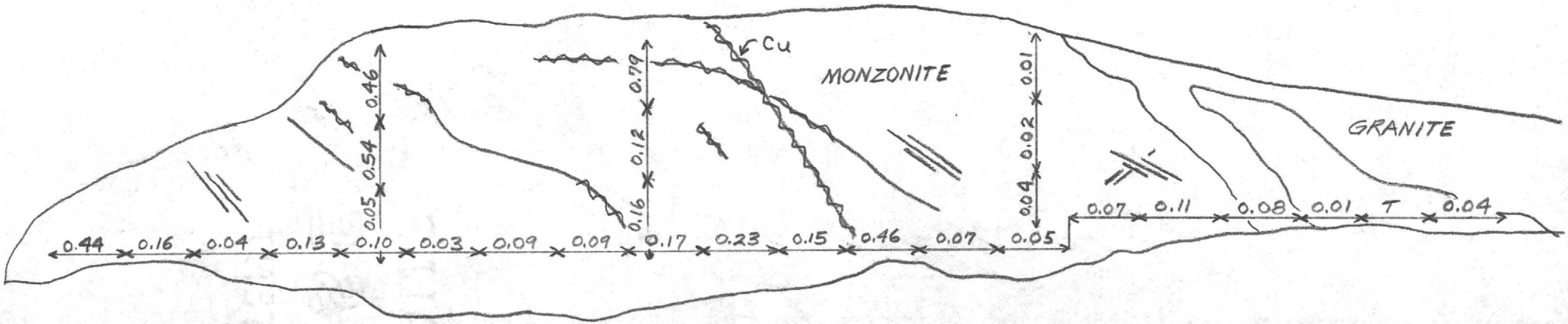
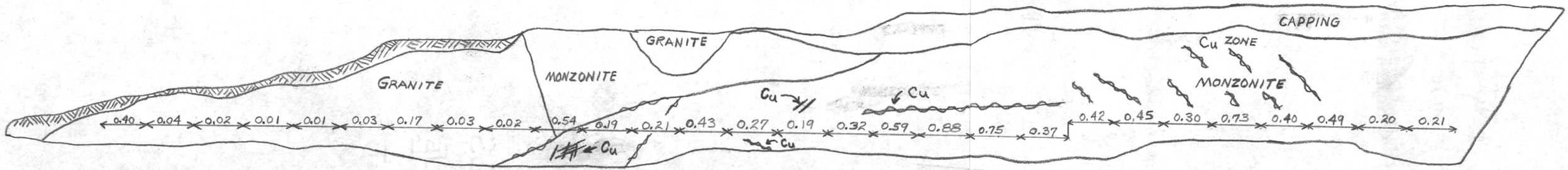


SCALE (FT)

0 5 10 15 20

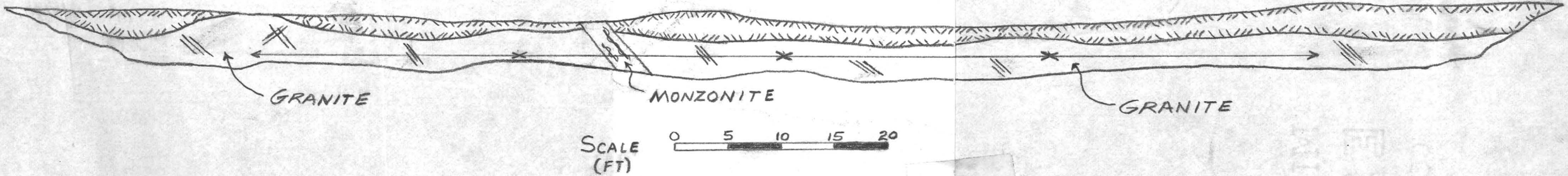
TRENCH #1 (WEST)



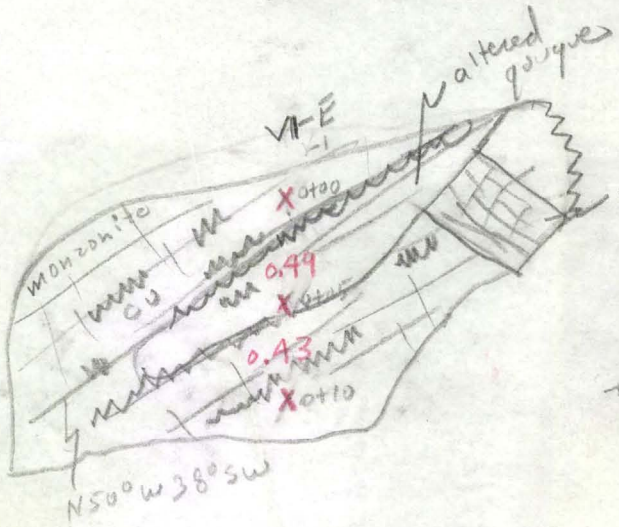
SCALE (FT)

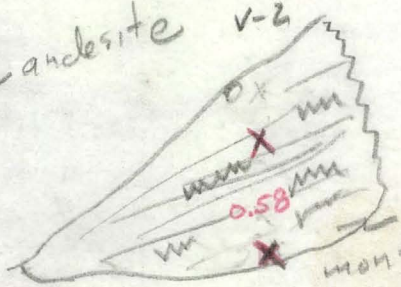
0 5 10 15 20

TRENCH 8 (EAST)



TRENCH #1 East Face 1"=10'





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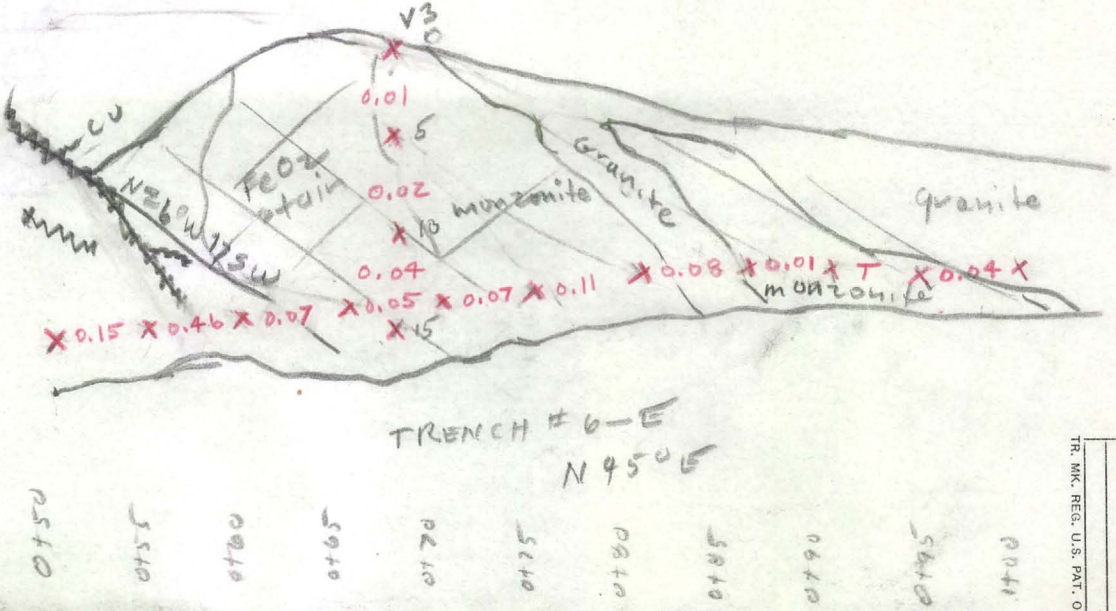

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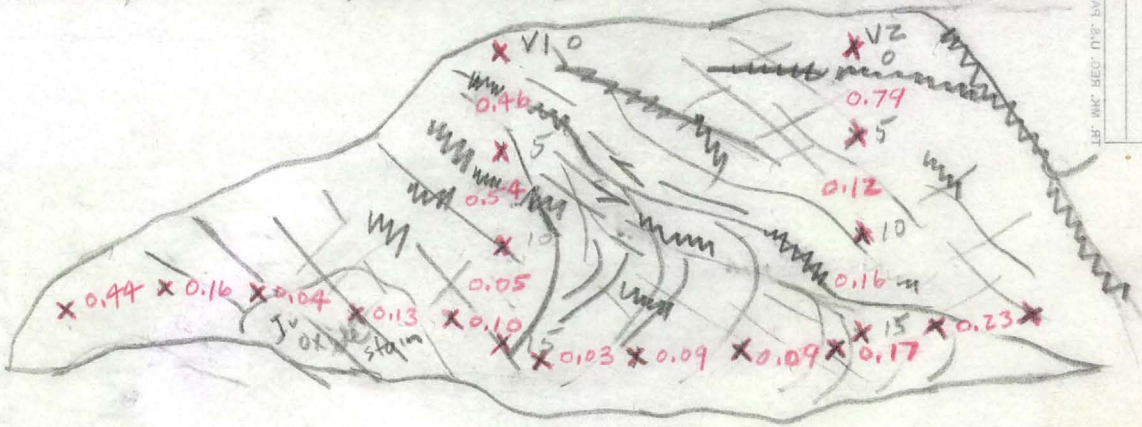
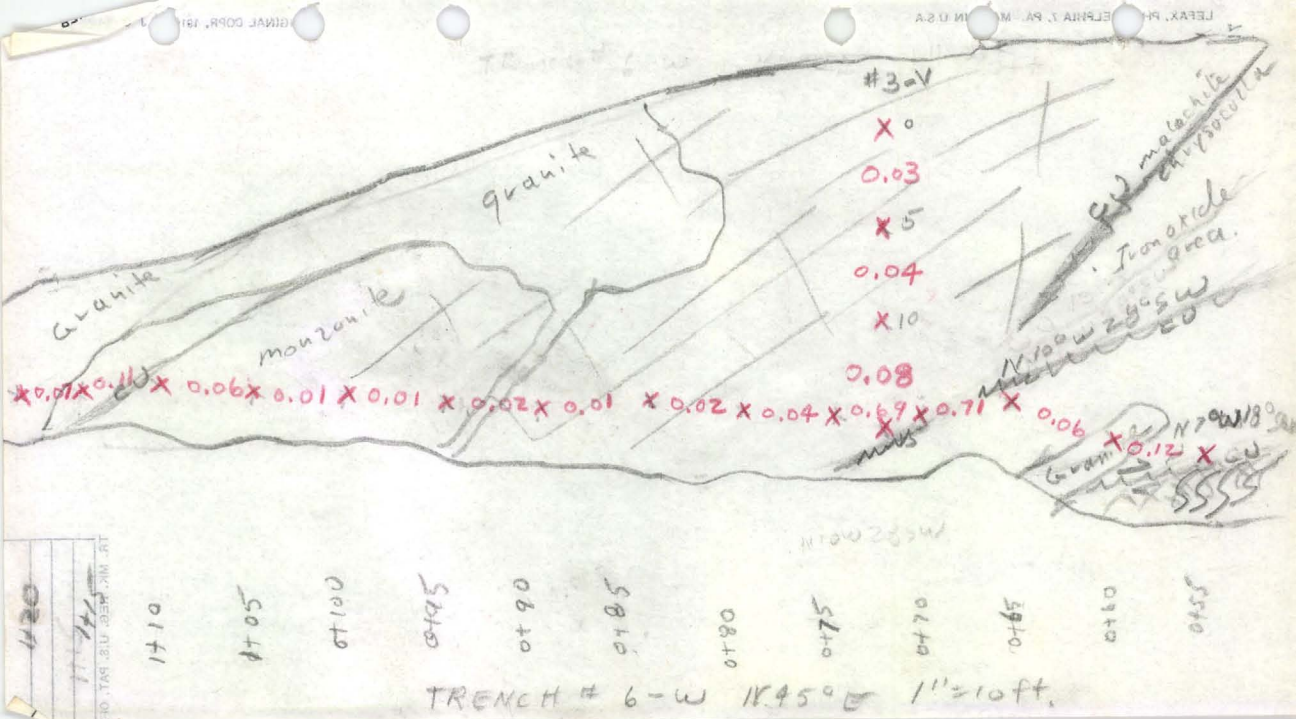
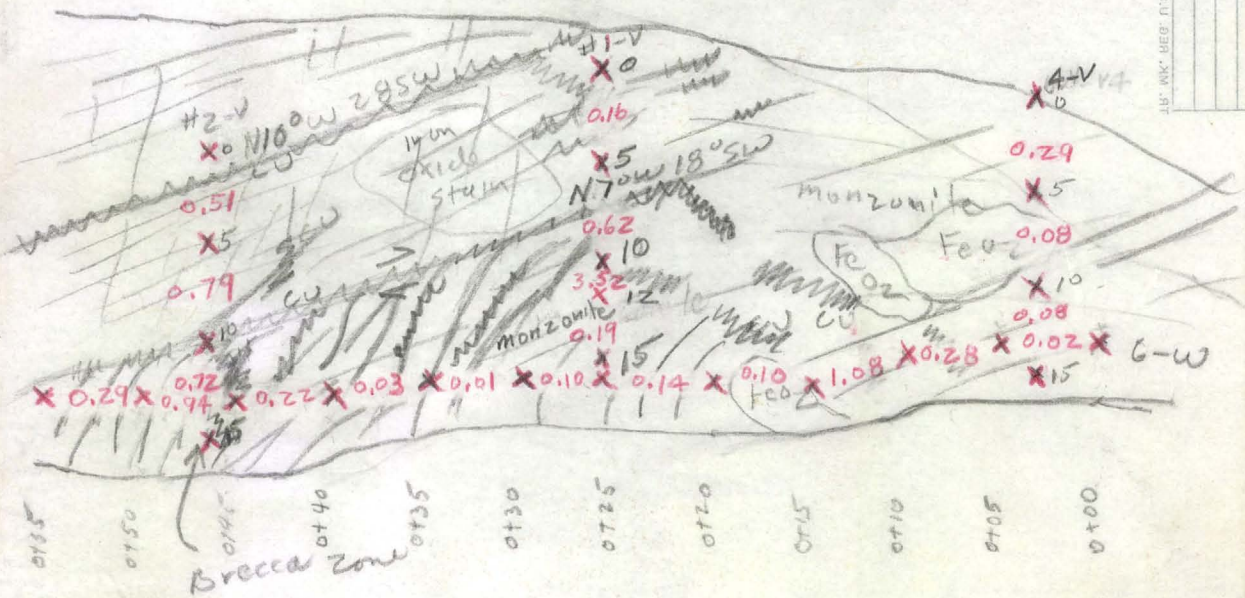
Looking East Trench 6-E N45°E 1" = 10ft.




#3-V
0
0.03
5
0.04
10
0.08
granite
Granite
monzonite
CU malachite
chrysocolla
Iron oxide area.
N 10° W 28° SW
0.07
0.11
0.06
0.01
0.01
0.02
0.01
0.02
0.04
0.69
0.71
0.06
0.12
N 7° W 18° SW
Granite
CU
1+20
1+10
1+05
0+100
0+95
0+90
0+85
0+80
0+75
0+70
0+65
0+60
0+55
TRENCH # 6-W N 45° E 1"=10ft.

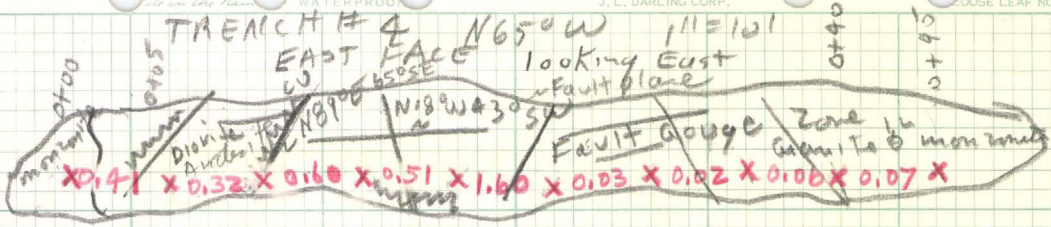
TRENCH 6-W N45°E, 1"=10ft.



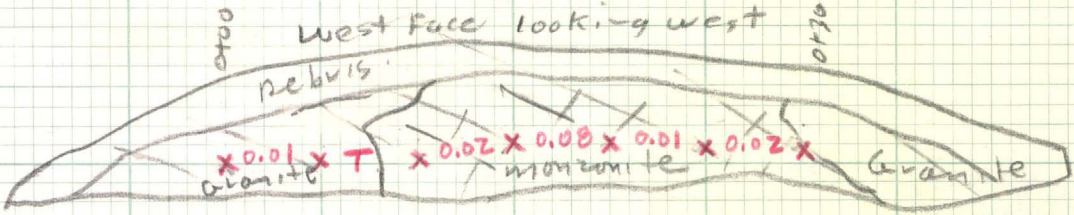
WATERPROOF J. L. DARLING CORP. LOOSE LEAF NO. 3

TRENCH # 4 N65°W 111E101

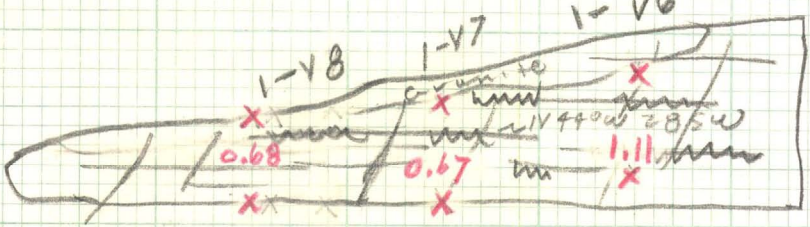
EAST FACE looking East



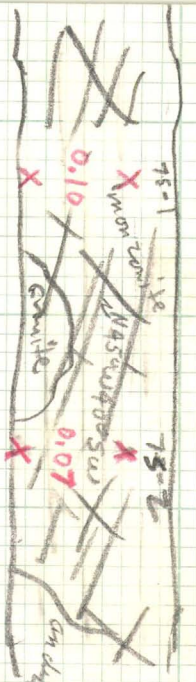
West Face looking west



TRENCH I-Ext N45°W

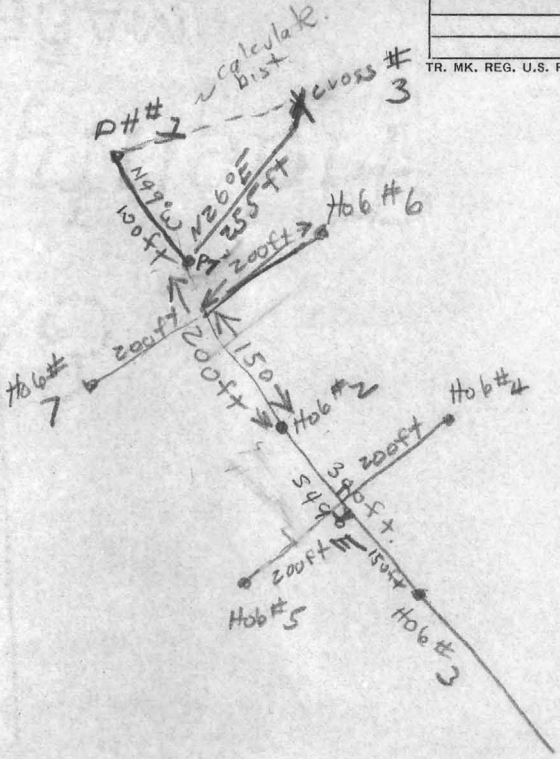


shear zones some chlorite and much iron stain.



TRENCH #7
N42°W

TR. MK. REG. U.S. PAT. OFF.



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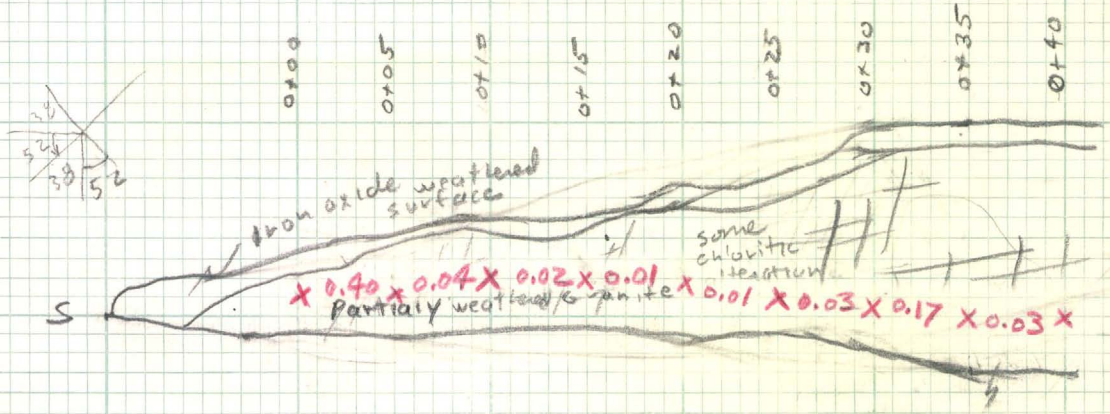
LEFAX. PHILADELPHIA 7, PA. MADE IN U.S.A.

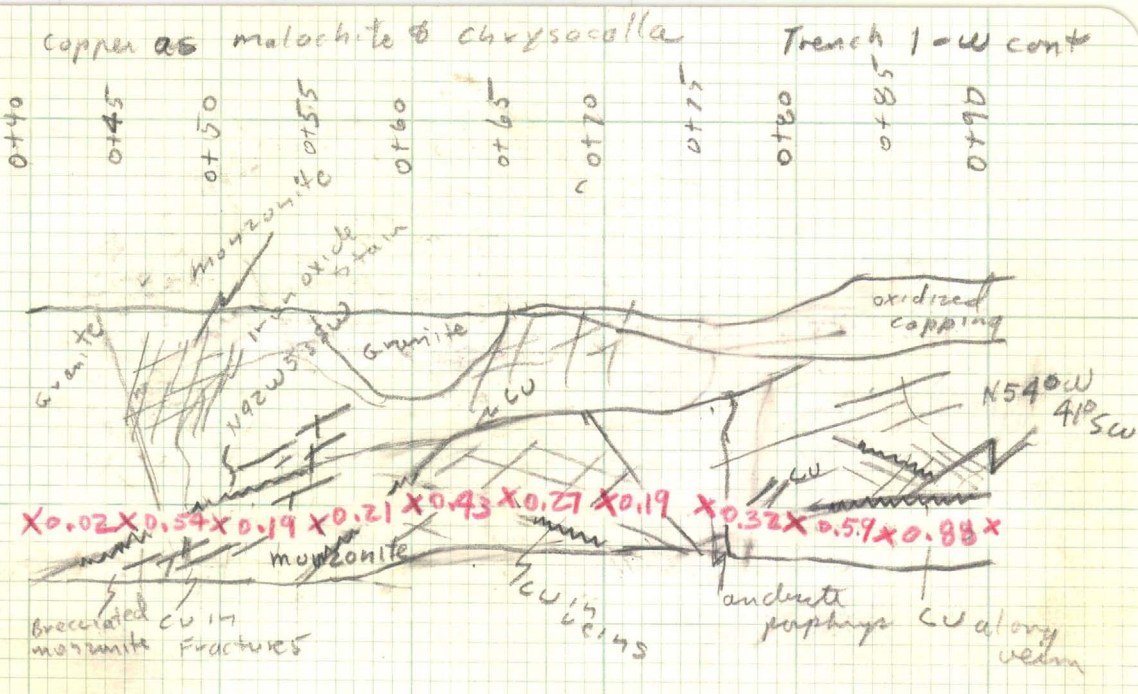
Location of Trench # 8

Not to scale

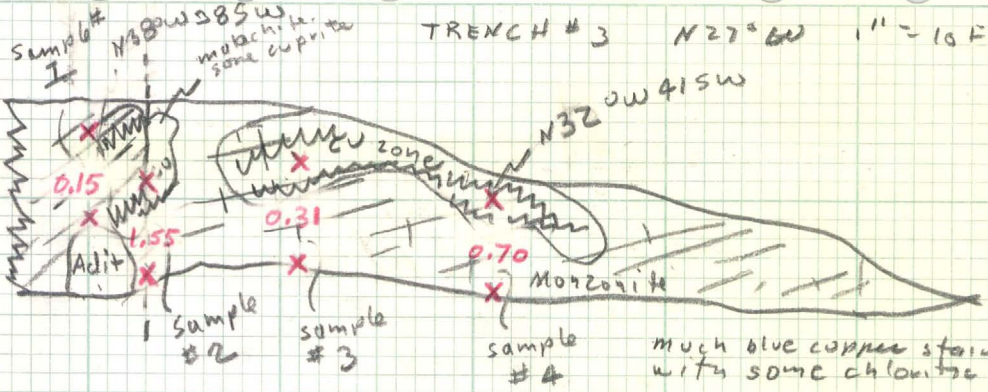
TR. MK. REG. U.S. PAT. OFF.
ORIGINAL COPR. 1910 BY J C PARKER
LEFAX. PHILADELPHIA 7, PA. MADE IN U.S.A

TRENCH #I 1" = 10 feet

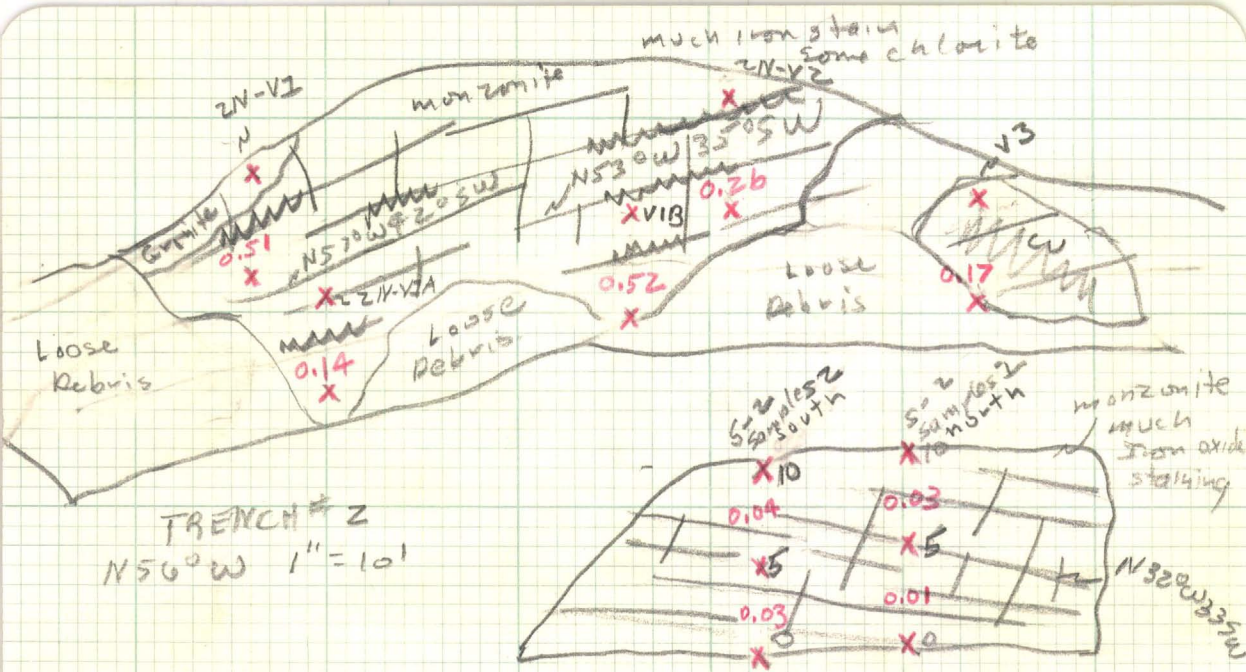


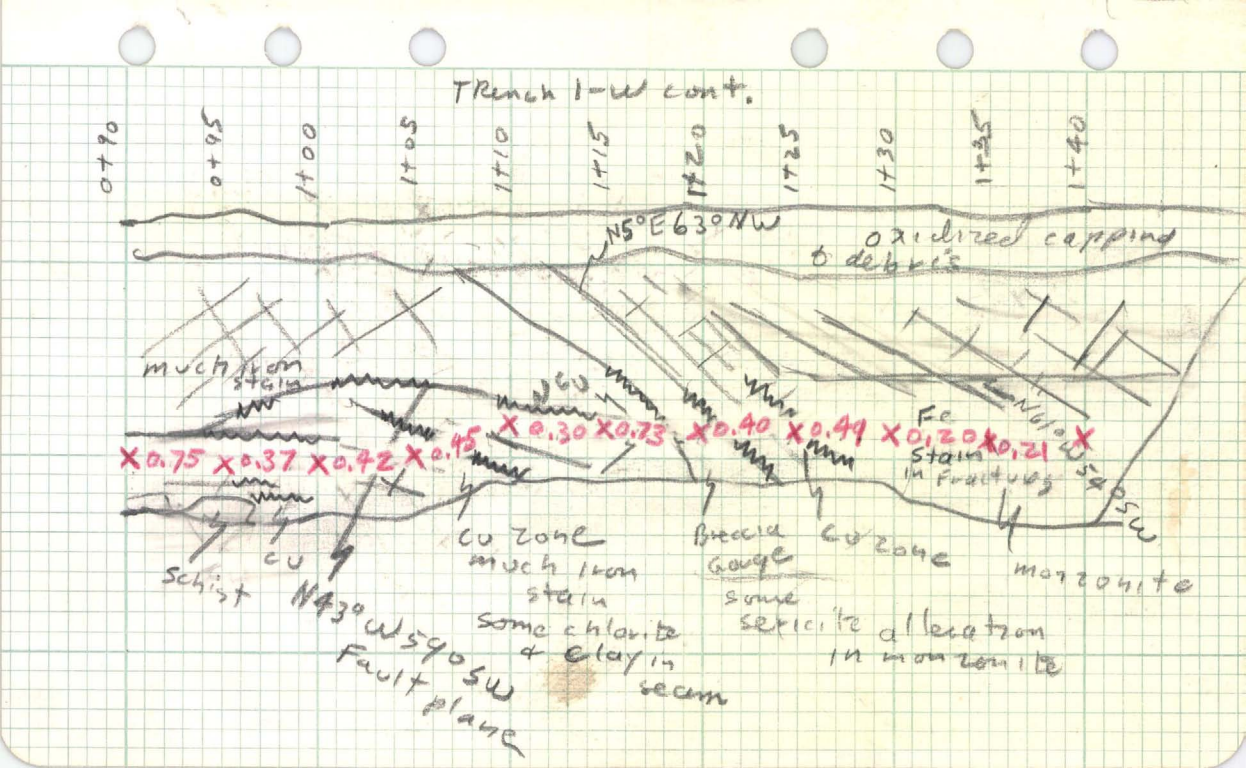

copper as malachite & chrysocolla
Trench 1-W cont
0+40
0+45
0+50
0+55
0+60
0+65
0+70
0+75
0+80
0+85
0+90
monzonite
oxide stain
granite
N92W 35SW
N 60W
oxidized capping
N54°W 41°SW
0.02 0.54 0.19 0.21 0.43 0.27 0.19 0.32 0.59 0.88
monzonite
Brecciated monzonite
Cu in Fractures
Cu in veins
andesite porphyry
Cu along veins

TRENCH # 3 N27°W 1" = 10 Ft.



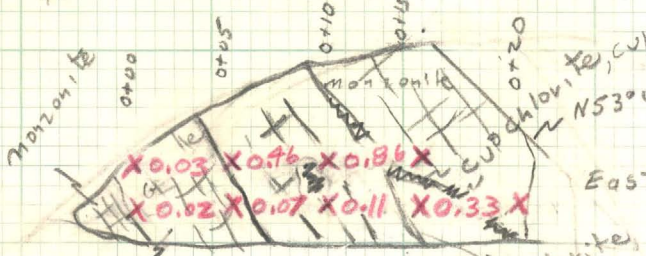
much blue copper stain with some chloritic alteration


much iron stain
some chlorite
2N-V2
2N-V1
monzonite
N53°W 35°SW
N57°W 42°SW
Granite
0.51
0.26
V1B
V3
0.17
0.52
2N-V1A
0.14
Loose Debris
Loose Debris
Loose Debris
S-2 samples 2 south
S-2 samples 2 north
monzonite
much iron oxide staining
10
10
0.04
0.03
5
5
0.01
0.03
0
0
N32°W 33°SW
TRENCH # 2
N56°W 1" = 10'


Trench 1-W cont.
0+90
0+95
1+00
1+05
1+10
1+15
1+20
1+25
1+30
1+35
1+40
N5°E 63°NW
oxidized capping & debris
much iron stain
X 0.75
X 0.37
X 0.42
X 0.45
X 0.30
X 0.73
X 0.40
X 0.49
Fe stain in fractures
X 0.20
X 0.21
X 0.54
Schist
Cu
N43°W 59°SW Fault plane
Cu zone much iron stain some chlorite & clay in seam
Breccia Gouge some sericite alteration in monzonite
Cu zone
monzonite
SW

N53°W
+E

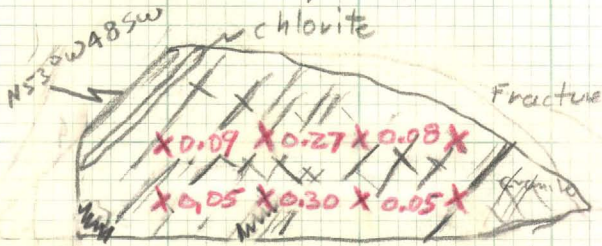
TRENCH # 5 N33°E 1" = 10 feet.



much chloritic & sericite alteration

N53°W 48 SW

East Face

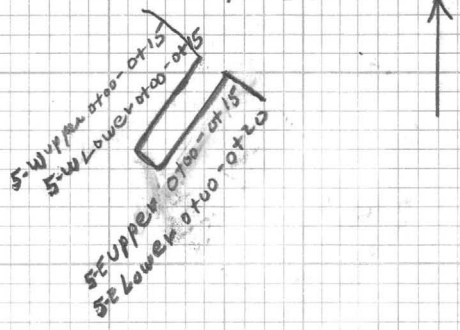


Fractured Fe stain much chlorite & sericite alteration

west Face

TRENCH No 5 N 33° E

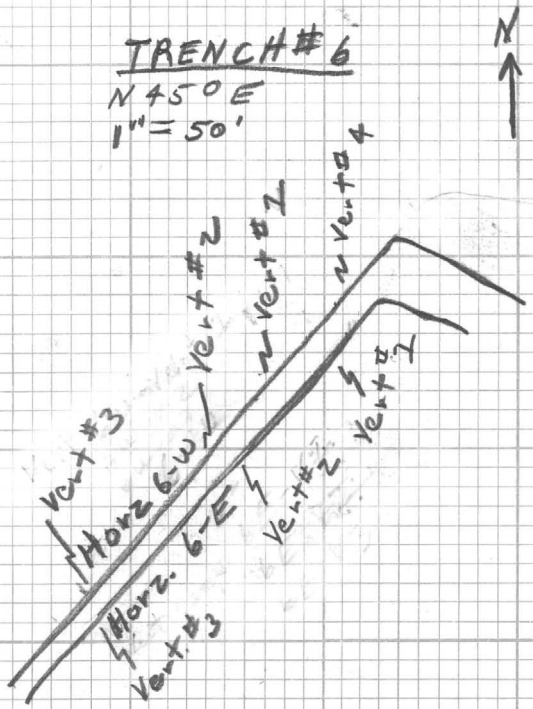
1" = 50'



TRENCH #6

N 45° E

1" = 50'



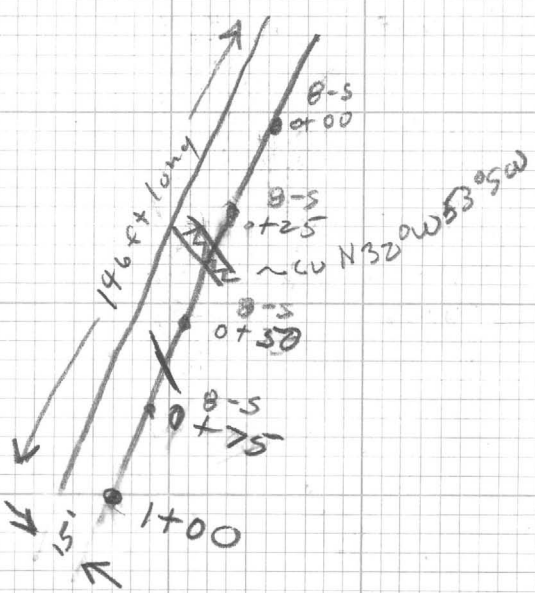
TRENCH #7
N62°W 1" = 50'

N

75-2
0-5 ft

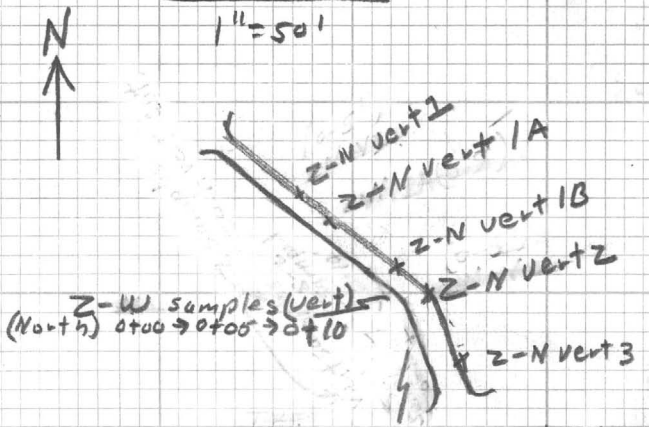
75-2
0-5 ft

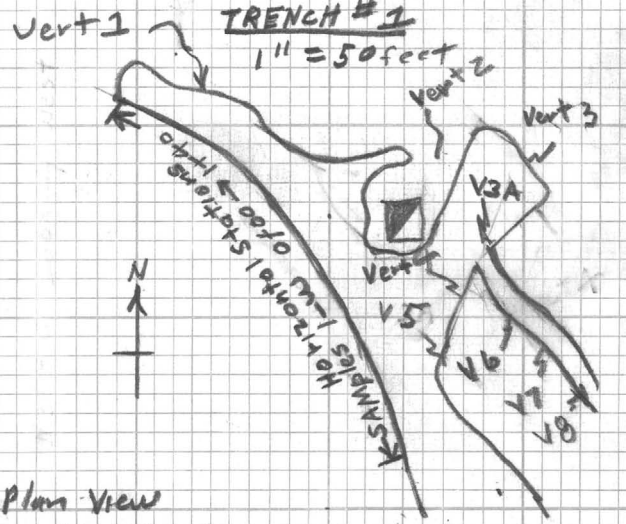
TRENCH #8
N10°E



TRENCH #2 N56°W

1" = 50'



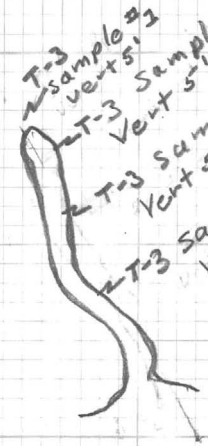


Plan View
North Star Mine

TRENCH # 3

1" = 50'

N 270° W



TRENCH # 4

1" = 50'

N 65° W

4-E 0+00 - 0+40

4-W 0+00 - 0+30

WATERPROOF
J. L. DARLING CORP.
LOOSE LEAF NO. 3

LOCATION of SAMPLING Details & Photo PANELS

FROM STA.	TO STA.	MAG. BEAR.	H.I.	+or- V. ∠	S.I	H.Dist.
Sec.	P.1	N31°E	5.0	-01°18'	3.4	339.8
P.1	P.2	N14°30'W	4.8	-01°02'	5.0	499.8
P.2	P.3	N48°W	5.1	-0°29'	2.7	269.9
P.3	P.4	N19°E	4.9	+0°04'	4.3	430.0
P.4	P.5	N01°E	5.2	+0°02'	4.6	460.0
P.5	C.5	S74°30'E	5.2	+01°06'	1.9	189.9
	C.1	N33°30'W		+0°30'	4.6	459.9
C.1	C.2	N84°W	5.2	-0°28'	5.3	529.9
	C.3	N03°E		+04°32'	6.9	685.7
C.3	C.4	S64°E	5.2	-02°27'	7.4	738.7
C.4	C.5	S18°W	5.0	-01°35'	8.4	839.4
C.1	T.1	N11°30'W	5.2	+1°42'	2.8	279.9
	T.3	N05°30'E		+04°14'	5.3	527.1
	T.2	N36°E		+64°18'	2.5	248.6
	T.6	N79°30'E		+02°37'	3.2	319.3
C.3	T.7	S27°30'E	5.2	-04°03'	4.6	457.7
	T.5	S38°E		-01°29'	5.6	559.6
	P.6	N48°30'E		-01°41'	1.2	119.9
P.6	T.4	N14°30'W	5.2	-13°35'	1.1	103.9
T1	P7	NZ 63dW	4.5	-7°55'	.68	66.7
T1	W side of T1 EXT. End	N54°30E		+6°10'	.57	56.3
T1	N end W side T1 Ext	N7°30E		+11°27'	.76	73.0
T1	Edge of T1 upper	N8°30E		+10°00'	.98	95.0
T1	Edge T1 upper	N15°W		+8°51'	1.06	103.4
T1	N End upper T1	N41°W		+4°58'	1.82	180.6
T1	wedge upper	N44°30W		+9°46'	1.20	119.2
T1	W. edge upper	N38°30'W		+4°24'	.77	76.5
T1	wedge upper	N42°W		+5°4'	.36	35.7

TR.MK. REG. U.S. PAT. OFF.

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From Sta	To Sta	Mag Bear	H.I	+ or − % Vert	SI	H. Dist
T1	E edge T1	N2°W	4.5	+10°40'	.6	57.9
T1	E. edge T1	N31°30E		+9°46'	.3	29.1
P1	E edge T1 Lower	N60°E	4.3	+2°25	.28	27.9
P1	N edge T1 lower	N53°W		+3°14'	.88	87.7
T2	up E side T2	S87°30'E	4.5	+1°38'	.46	45.96
T2	up E side T2	S67°E		+8°8'	1.03	100.9
T2	up E side T2	S52°E		+5°4'	1.53	152.9
T2	℄ T2	S54°30E		-3.6'	1.08	107.9
T2	℄ T2	S55°30E		-10°21'	.67	64.8
T2	up West side T2	S54°E		+9°41'	1.00	99.3
T2	up west side T2	S40°E		+6'	.58	58.0
T7	up W side T7	S20°30'E	4.5	+16°57'	.52	47.6
T7	up E side T7	S40°E		+17°3'	.48	43.9
T7	℄ T7	S1°E		+7°8'	.27	26.6
T7	℄ T7	N85°30W		-16°43'	.64	58.7
T7	up W side T7	S87°W		-8°25'	.72	70.5
T7	E side T7	N78°30W		-12°19'	.53	50.6
T5	up cor T5	S51°30W	4.5	+15°37'	.40	37.1
T5	W cor T5	S29°30W		+15°56'	.39	36.0
T5	E end T5	S89°W		+2°39°	.14	19.0
T5	E end T5	S31°30W		+6°6'	.09	8.9
T5	E cor T5	S43°30W		+1°22'	.35	35.0
T5	E cor T5	S33°W		-1°51'	.33	33.0
T6	℄ T6	N52°30E	4.5	-26'	.31	31.0
T6	℄ T6	N45°E		-4°11'	1.05	104.4
T6	℄ T6	N43°30E		-52'	1.84	184.0

NORTH STAR
#357 7/27/70
SURVEY WORK
Details of Stamp.

TR.MK. REG. U.S. PAT. OFF.

E. Dif.	Elev.
-7.72	2000.0
-9.00	
-2.19	
+ .52	
+ .28	
+3.65	
+4.00	
-4.29	
+54.37	
-31.38	
-20.20	
+3.42	
+40.44	
+18.70	
+14.50	
-32.29	
-14.34	
-3.49	
-25.17	
- 9.25	
+6.09	
+14.77	
+15.14	
+16.26	
15.71	
+9.94	
+5.89	
+3.17	

NGWL

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From Sta	To Sta	mag Bear	H.I	+or- ve. T&	SI	H.Dist
T6	W side T6	N40°30'E	4.5'	+2°35'	1.48	145.4
T6	W side T6	N36°30'E		+9°13'	.70	68.2
T6	E side T6	N59°30E		+6°8'	.70	69.2
T6	E side T6	N47°30'E		+6°47'	1.40	138.0
T3	N end T3	S14°30W	4.5'	-10°8'	.24	23.2
T3	W side T3	S1°W		-11°17'	.50	48.0
T3	E T3	S13°E		-16°95'	.65	59.6
T3	W side T3	S8°E		-11°17'	.72	69.2
T3	℄ T3	S30°30'E		-22°30'	.99	41.8
T3	E side T3	S18°E		-14°18'	.67	62.9
T3	E side T3	S13°E		-13°24'	.36	34.1
T4	W side T4	S55°30'E	4.5	-14°14'	1.36	135.2
T4	W side T4	S41°30'E		+11°41'	.72	69.0
T4	W side T4	S9°W		+17°24'	.33	30.0
T4	E T4	S52°E		-1°38'	.37	36.9
T4	℄ T4	S55°E		+3°12'	.96	95.7
T4	E side T4	S61°E		+6°31'	.81	80.0
T4	E side T4	S76°E		+13°	.16	15.2

TR.MK. REG. U.S. PAT. OFF.

E Diff Elev.
+10.91
+5.02
+1.17
+4.95
+1.31
+14.43
+2.58
-1.13
-11.82
+8.11
+0.10
+19.49
+13.44
+3.33
-17.61
-10.40
+11.03
+10.36
+10.30
+0.63
+0.95
-0.83
-5.89
-0.24
-7.61
+2.18

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3 5
97.8 5400
48

540 97.82

TR.MK. REG. U.S. PAT. OFF.

E Diff	Elev
+19.31	
+11.05	
+7.43	
+16.38	
-23.56	
-9.58	
-17.92	
-13.79	
-17.33	
-16.03	
-8.11	
+10.38	
+14.26	
+9.42	
-0.95	
+5.35	
+9.11	
+3.51	

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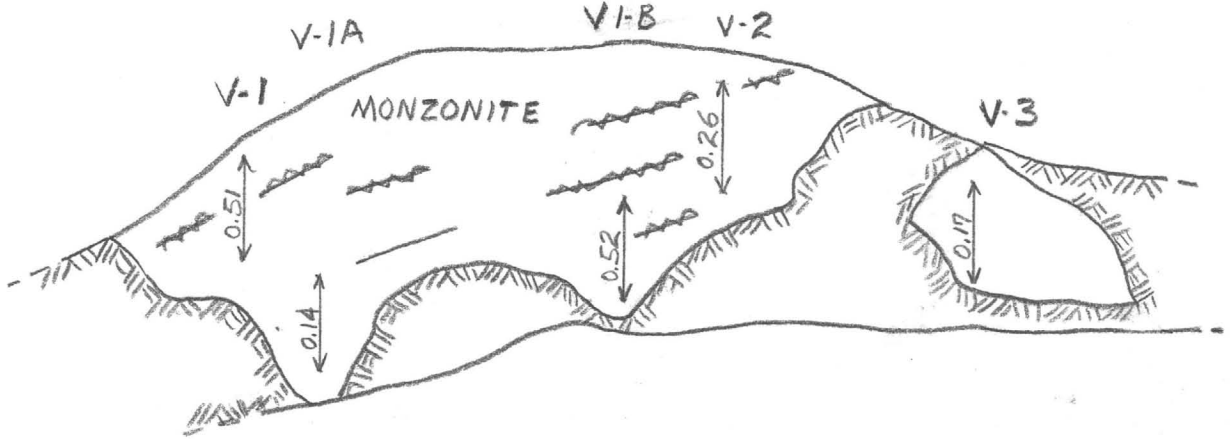
TRENCH 2 (NORTH)



SKETCH OF CLAIMS
NORTH STAR PROJECT
PINAL COUNTY, ARIZONA
FOR
ESSEX INTERNATIONAL, INC.
BY
HEINRICHS GEOEXPLORATION COMPANY
SCALE APPROX: 1"=2000'
MAY 1970

HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

August 25, 1970

MEMO:

To: ESSEX International Inc.

From: GEOEX Staff

Subject: North Star Project, Pinal County, Arizona.
GEOEX Job # 557. Current Status and Recommendations

At the request of Mr. Howard Lanier a review conference was held at ESSEX Tucson Office on 19 August 1970. Present were: H. Lanier, E.G. Heinrichs, D.B. Cooley, W.E.H. Heinrichs,Jr., and J. Sherman. Mr. Sherman summarized technical accomplishments to date and presented preliminary rough plans and sections of geology and trenching results.

Basically it was agreed that data were insufficient, inclusive and at best, economically marginal. Indications from very crude and preliminary estimates (guesses) are 0.3% copper averages over minimum mineable widths and so far, sub-marginal tonnage. To obtain more conclusive data in this presently indicated primary exposed area of interest, it was decided to drill seven shallow holes (200' +). Most of this and related matters are covered in Mr. Sherman's memo to Mr. Cooley dated 24 August, 1970, copies of which have been submitted to all concerned.

Meanwhile, Mr. Lanier requested a proposal and data to support broader and deeper reconnaissance exploration, including one or more deep drill holes, to be completed and appraised before the end of the current option period about December 1970. This has been considered and is presented as follows:

Cont'd.....

I. Preliminary reconnaissance induced polarization-resistivity, electrical geophysics, minimum 6 long lines, 2000' apart with 1000' dipole spacing continuous to 6"n" intervals, or equivalent 7 sending electrode array coverage.

(a) Estimated: 20 field days required at $400.00 per day = $8,000.00---------- $ 8,000.00
including report interpretation and recommendations.

(b) Depending on degree of encouragement obtained in results of the above work and how far such might extend, etc., approximately 17 days more may be required for extended coverage, fill in coverage and sharper focusing on either deeper or shallower indications, or both. In this connection, there is some prior I.P. data available which indicates favorable sulfide response, at least partly within the primary proposed coverage area. Our program is designed to especially appraise <u>this</u>, as well as to cover the geologically favorable area already indicated and partly tested by prior work. This may or may not include any coverage over one known sub-surface possibility which lies well <u>outside</u> the presently optioned claim group.

Contingent: 17 days X $400.00/day = $6,800.00 $ 6,800.00
Probable Maximum I.P.---------- $ 14,800.00

This work would provide at least one or more primary deeper drill targets and together with geology, a priority analysis on drill site preferences if more than one target is indicated.

II. One 2000 foot drill hole will cost between $10,000 and $20,000 depending on drill method chosen. Therefore, we recommend a drill budget of no less than $30,000.00---------- $30,000.00
Total geophysics and drilling------ $45,000.00

Cont'd.....

I. (a) Proposed I.P. coverage sketch is attached.

SUMMARY:

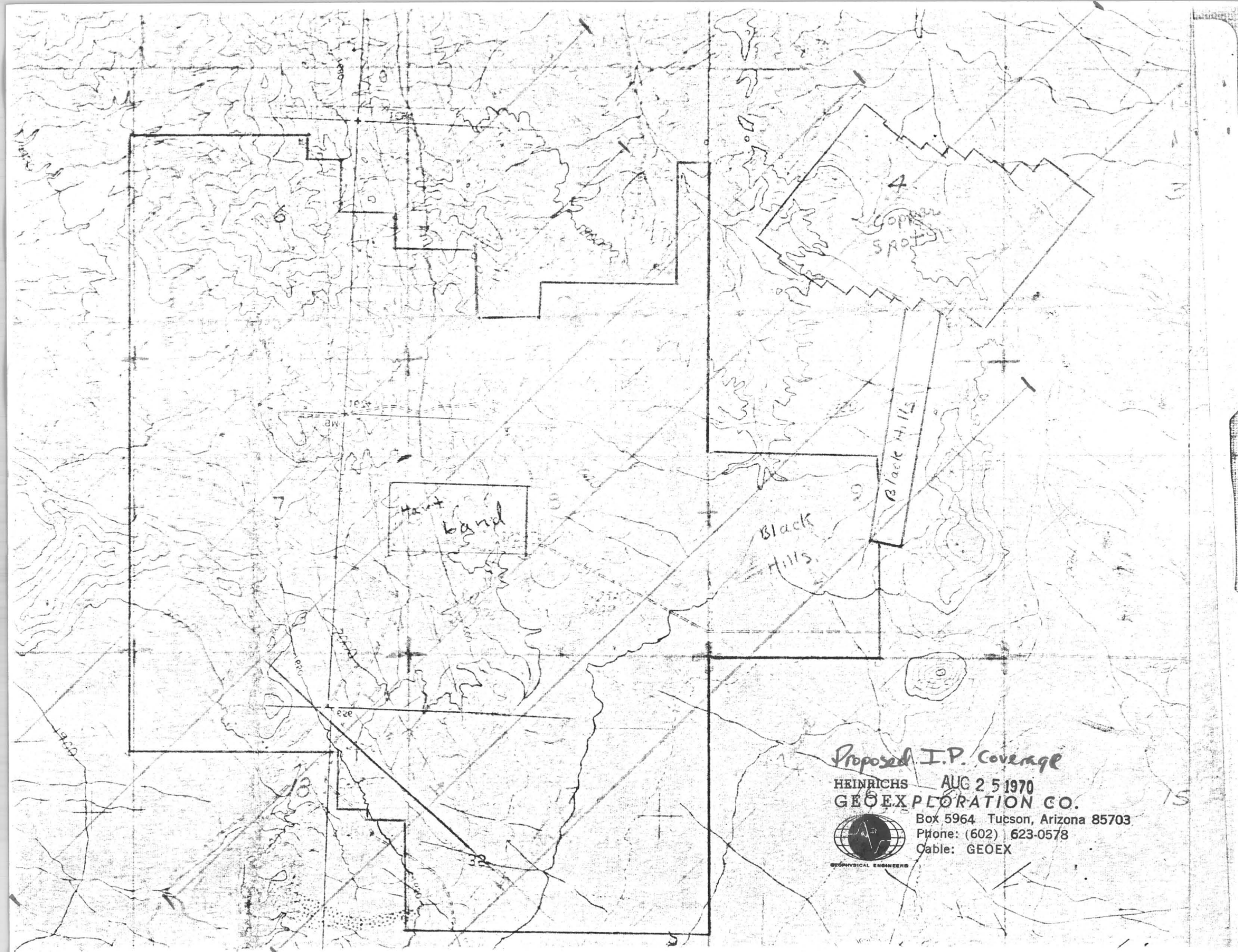
This program will provide necessary information upon which to base a decision whether to abandon or continue work in the area much beyond the end of this year, or thereabouts. A quantity of effort much less than this will be similar to efforts in the past by many and all of which were inadequate to reasonably disprove the apparent potential indicated by the surface showings.

If not started right away, it may be difficult to have this work completed and properly assimilated within the time allotted.

Respectfully submitted:
HEINRICHS GEOEXPLORATION COMPANY

By: _____
Walter E. Heinrichs, Jr.
President

Distribution: H.L., E.G.H. Essex Office
Geex " file ✓



HEINRICHS AUG 25 1970

GEOEXPLORATION CO.
Box 5964 Tucson, Arizona 85703
Phone: (602) 623-0578
Cable: GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

August 25, 1970

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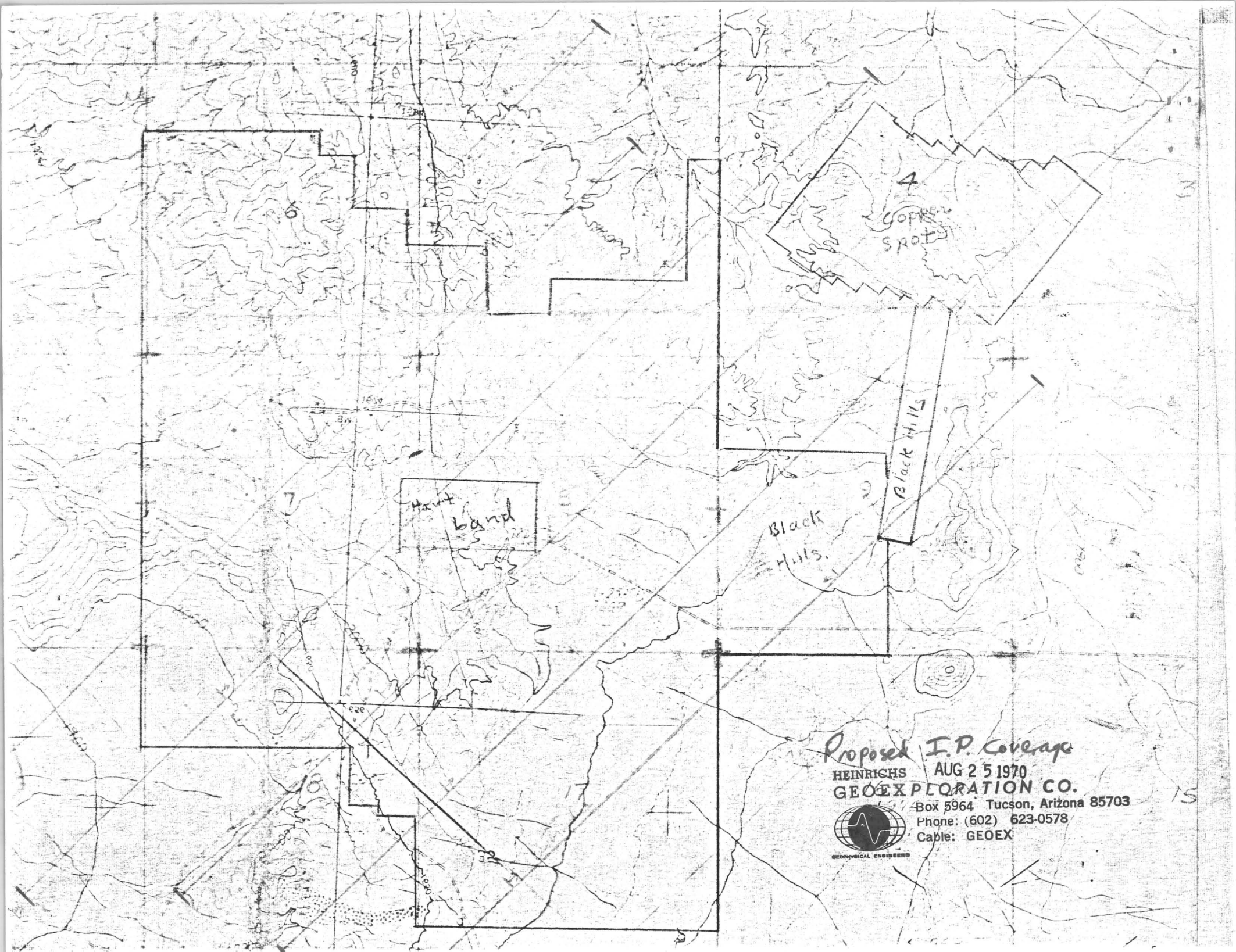
Cont'd.....


4
Gopher Spot
Black Hills
Hart band
Black Hills.
Proposed I.P. Coverage
HEINRICHS
AUG 2 5 1970
GEOEXPLORATION CO.
Box 5964 Tucson, Arizona 85703
Phone: (602) 623-0578
Cable: GEOEX
GEOPHYSICAL ENGINEERS

I. (a) Proposed I.P. coverage sketch is attached.

SUMMARY:

This program will provide necessary information upon which to base a decision whether to abandon or continue work in the area much beyond the end of this year, or thereabouts. A quantity of effort much less than this will be similar to efforts in the past by many and all of which were inadequate to reasonably disprove the apparent potential indicated by the surface showings.

If not started right away, it may be difficult to have this work completed and properly assimilated within the time allotted.

Respectfully submitted:
HEINRICHS GEOEXPLORATION COMPANY

By: _____
Walter E. Heinrichs, Jr.
President

Distribution: [redacted], E.G.H. Essex Office
Geox "file"

ESSEX INTERNATIONAL INC.
EVALUATION SCHEDULE
NORTH STAR PROJECT

5-13-70

TYPE WORK	TOTAL EST. COST	0	1	2	3	MONTHS 4	5	6
OPTION AGREEMENT	500	—						
2. LEGAL LAND STUDY	500	500						
3. BASE MAP PREP.	2,000	2000						
4. GEOLOGICAL STUDY & SUPV.	9,000	1500	1500	1500	1500	1500	1500	
5. ASSAYING	5,000	1000	2000	2000				
6. BULK SAMPLING	15,000	7500	7500					
7. DRILLING	32,000		10,000	10000	12000			
8. MET. TEST. & SUPERV.	10,000	1000	4500	4500				
9. GEOCHEM STUDY	2,500		2500					
10. LEACH SITE STUDY	2,000			2000				
11. PRELIMINARY ENG.	3,000				3000			
12. ECONOMIC EVALUATION	1,000					250	750	
13. LEASE COST	6,000	1000	1000	1000	1000	1000	1000	
TOTAL	$85,500	500	14,500	29,000	21,000	17,500	2,750	3,250

EXPLANATION

1. LEGAL FEES
2. CLAIM STATUS CHECK, COURT HOUSE ETC.
3. INCLUDES AERIAL PHOTOS PANELING SEC. CORNERS ETC.
4. " SHALLOW CORE, PERCUSSION & CHURN
5. " DOZING FOR TRENCHING, AIR HAMMER, BLASTING, ETC.

Contingency 10% 8,550

Tentative Approval by H.L. 5-13-70

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Essex International, Inc. A030 G3-03
Mr. Howard Lanier
2030 E. Speedway
Tucson, Arizona 85719 CC: Don Coaley

JOB # 007198
RECEIVED 8-11-70
REPORTED 8-15-70

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
2379				14.5			
2380				3.7			

GEOEX
Cable: GEOEX

REC'D AUG 18 1970 REC'D

POY ERA TUCSON, ARIZONA 85703
Phone: (REA 602) 623-0578

CHARGE $ 8.00

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
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2380				3.7			

CHARGE $ 8.00

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

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TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Essex International, Inc.
Mr. Howard Lanier
2030 E. Speedway
Tucson, Arizona 85719

A 028 03-03

CC: Don Coaley

JOB# 007199
RECEIVED 8-11-70
REPORTED 8-15-70

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
2381				2.4			
2382				2.5			

CHARGE $ 8.00

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Essex International, Inc. A 028 03-03
Mr. Howard Lanier
2030 E. Speedway
Tucson, Arizona 85719 CC: Don Cooley

JOB# 007199
RECEIVED 8-11-70
REPORTED 8-15-70

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
2381				2.4			
2382				2.5			

CHARGE $ 8.00

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Essex International, Inc.
Mr. Howard Lanier
2030 E. Speedway
Tucson, Arizona 85719

A 027 G3-03

CC: Don Coaley

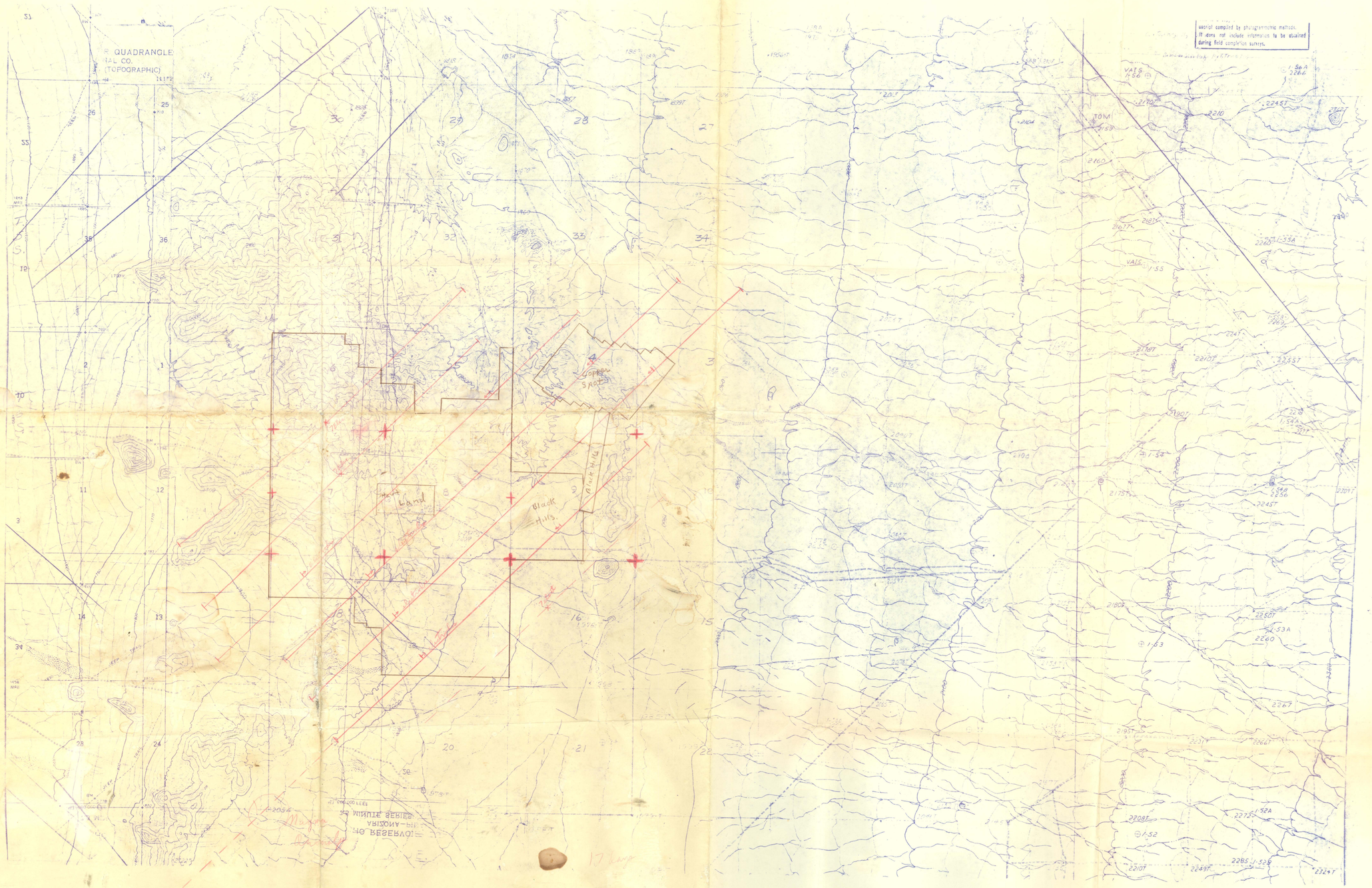
JOB # 007200
RECEIVED 8-11-70
REPORTED 8-15-70

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
2383				31.0			
2384				3.6			
2385				1.65			

CHARGE $ 6.00

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE



uscript compiled by photogrammetric methods.
It does not include information to be obtained
during field completion surveys.

17 days

$6800

(Royal Zone)

398
4569

623-0578 - Office (Don Copley) - Geologist
Walsh
Blue - White Bronco

GEOLOGY OF THE NORTH STAR MINE AND VICINITY

PINAL COUNTY Scale 1:2400 ARIZONA

200 100 0 200 400 600 800 Feet

Contour Interval 20 Feet

January 1967

Legend

Quaternary	qi	Alluvium
Laramide (?)	rhy	Rhyolite - feldspar phenocrysts with or without biotite phenocrysts
	qp	Rhyolite - quartz and feldspar phenocrysts
	ap	Aplite
Precambrian (?)	dp	Dacite porphyry
	gdp	Granodiorite porphyry
	db	Diabase
Precambrian	gn	Gneiss, schist and hornfels
	qm	Quartz monzonite (Oracle Granite)
	gr	Granite

NORTH STAR MINE
GEOLOGY

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION VERTICAL HOLE NO. # 1
INCLINATION PROPERTY NORTH STAR
STARTED LOCATION FLORENCE
COMPLETED COLLAR COORD: N E
SCALE: DEPTH COLLAR ELEVATION
DATE NOTES BY SHEET OF

LITHOLOGY	MINERAL	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0 ~~Fill~~ alluvium			
		5 WEATHERED GRANITE, FINE GRAINED			
		10			
		15			
		20 TRACE OF Cu OX			
		25			
		30			
		35 NO Cu OX SEEN			
		40			
		45			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 1
INCLINATION _____ PROPERTY _____
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		45			
		50			
		55			
		60 WATER			
		65 COARSE GRAINED WEATHERED GRANITE			
		70			
		75 TRACE OF Cu OX			
		80 CLAY, RED STAINING - POSSIBLE FAULT ZONE.			
		VERY COARSE GRAINED GRANITE, APPEARS TO BE ORACLE GRANITE.			
		85			
		90			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 1
INCLINATION _____ PROPERTY N. S.
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		90			
		95			
		100			
		105			
		110			
		115			
		120			
		125 REDISH-BROWN IRON-OXIDE STAINING TO 127'. FAIR SHOWING OF Cu OX. POSSIBLE SUPERGENE ENRICHMENT.			
		130			
		135			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 1
INCLINATION _____ PROPERTY N.S.
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		135			
		140 TOP OF HOLE CAVING SLIGHTLY - INSERTED 15' OF CASING			
		145 GRANITE MUCH HARDER, UNWEATHERED. CuOx REDUCED TO TRACE			
		150			
		155			
		160 SAMPLE RELIABILITY DOUBTFUL, AREA AROUND CASING SEEMS TO BE SLUFFING IN.			
		165			
		170			
		175			
		180			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 2
INCLINATION _____ PROPERTY NORTH STAR
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITHOLOGY	MINERAL	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0 WEATHERED GRANITE			
		5			
		10			
		15 TRACE OF Cu OX SEEN			
		20 NO Cu OX SEEN			
		25			
		30			
		35			
		40			
		45			

HEINRICHS GEOEXPLORATION COMPANY
POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

HEINRICHS GEOEX GEOPHYSICAL ENGINEERS

DIRECTION _____ HOLE NO. 2
INCLINATION _____ PROPERTY _____
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		45			
		50			
		55			
		60			
		65			
		70			
		75			
		80 WATER			
		85			
		90			

HEINRICHS GEOEX GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

1

DIRECTION _____ HOLE NO. _____
INCLINATION _____ PROPERTY N.S.
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		90			
		95			
		100			
		105			
		110			
		115			
		120			
		125			
		130			
		135			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 1
INCLINATION _____ PROPERTY N-3
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		135			
		140			
		145			
		150			
		155			
		160			
		165			
		170			
		175			
		180 T.D. TOP OF HOLE CASING			

HEINRICHS GEOEX GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 3
INCLINATION _____ PROPERTY _____
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0 MONZONITE - weathered with slight ~~red~~ pink stain			
		138 dark gray rock (DIORITE ?)			
		160 - WATER			
		176 GRANITE			
		182 - FAULT ZONE -			
		184 - BACK IN DIORITE (?), very Hard			
		200 - END OF HOLE			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 4
INCLINATION _____ PROPERTY _____
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0 WEATHERED MONZONITE			
		20- TRACE of Cu Oxides			
		100 - WATER			
		~~105~~ 115 FAULT ZONE			
		115 - 135 TRACE OF Cu Ox			
		135 - 140 FAULT ZONE			
		200 T.D.			

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 5
INCLINATION _____ PROPERTY _____
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITHOLOGY	MINERAL	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0 - 14 - fill			
		14 - WEATHERED GRANITE			
		20 - HARD GRANITE			
		39 - RED IRON STAIN, ALTERED GRANITE - GOOD Cu Ox			
		45 - HARD GRANITE - TRACE OF Cu Ox			
		55 - WATER - No Cu Ox			
		60 - TRACE OF Cu Ox, VERY HARD			
		75 - softer drilling - seams broken			
		100 - slickensides, trace of Cu Ox			
		110 VERY hard (biotite ?)			
		120 TRACE OF Cu Ox			
		TD			
		150 Very hard dark granitic rock, trace of Cu Ox (May be contamination from upper portion of hole). T.D. VERY HARD, SLOW DRILLING - EXCESSIVE BIT CONSUMPTION			

GEOPHYSICAL ENGINEERS

6

DIRECTION _____ HOLE NO. _____

INCLINATION _____ PROPERTY _____

STARTED _____ LOCATION _____

COMPLETED _____ COLLAR COORD: N _____ E _____

SCALE: _____ DEPTH _____ COLLAR ELEVATION _____

DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0-25 ~~Rotary~~ Drilled			
		25-45 cored - Trace of Cu Ox on Fracture Surface			
		45-46 ~~Rotary~~ Drilled Cu Ox in Cutings			
		46-55 CORED - Trace of Cu Ox in Cutings			
		55-75 ROTARY Drilled - Later part clayey			
		75-82 CORED - altered granite			
		82- ROTARY DRILLED			
		200 T.D.			

HEINRICHS GEOEX GEOPHYSICAL ENGINEERS

HEINRICHS GEOEXPLORATION COMPANY

POST OFFICE BOX 5964 TUCSON, ARIZONA 85703
PHONE: 602/623-9578 CABLE: GEOEX, TUCSON

DIRECTION _____ HOLE NO. 7
INCLINATION _____ PROPERTY N-5.
STARTED _____ LOCATION _____
COMPLETED _____ COLLAR COORD: N _____ E _____
SCALE: _____ DEPTH _____ COLLAR ELEVATION _____
DATE _____ NOTES BY _____ SHEET _____ OF _____

LITH-OLOGY	MIN-ERAL.	ROCK TYPE - GEOLOGY	SURV.	% CORE RECV'D	CORE ASSAYS SECT.
		0			
		200 T.D.			

Don F49

Assays from Sheep Rock - given by Mr. Burke - ESSEX

Sample No.	Percent. Cu.	Sample Description
2379	14.5	Copper Mt. character sample from dump
2380	3.7	Copper Mt. dump at top of hill
2381	2.4	~~Graham~~ Graham Gulch - dump pit near leach pond
2382	2.5	" " Fine grind pile 100' south of coarse pile
2383	31.0	Savannic - high grade underground
2384	3.6	" - Upper dump
2385	1.65	" - Mid Dump
2386	0.45	Sheep Rock -Dump No. 1 by house
2387	0.79	" " - Big fracture clay from main tunnel
2388	0.12 down dump side	Sheep Rock shaft above drift
2389	1.03	Sheep Rock Grab sample of iron and manganese oxides from dump on hill
2390	andesite 0.03	Sheep Rock - Earl's Hill south of Sheep Rock
2391	0.55 barrier	Sheep Rock - High grade ~~xxxx~~ rock from Porcupine Tunnel
2392	0.30 Cooley	Sheep Rock - 30" channel - vertical from 6' winze and taken 135' back in Porcupine tunnel
2393	0.66	Shaft above drift at top of dump.

8/13/70

Assays - Sheep Rock -

Sample No.	Percent cu.	Sample Description
2379	14.5	copper Mt. character Sample from dump.
	3.7	dump at top of hill.
	2.4	Graham Gulch - dump pit near leach pond
	2.5	" " - fine grind pile 100' south of coarse pile
	31.0	Savannic - high grade underground
	3.6	" - ~~copper~~ upper dump
	1.65	" - Mid dump
	0.45	Sheep Rock - dump (no.) by house
	0.79	" " Big fracture day from main tunnel
	0.12	" " shaft above drift
2393	1.03	" " Grab sample of iron + manganese oxides from dump on hill.
	0.03	" " Earl's Hill - ~~top of~~ South of Sheep Rock
	0.55	" " High grade rock from Porcupine Tunnel
	0.30	" " 30" channel + vertical 6' winze + taken 135' back in Porcupine tunnel
	0.66	" " Shaft above drift at top of dump -

Formal -

Grover
Jim Sherman
Don Cooley

Essex North Star Proj.

3226 East 46th Street
Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Incorporated

DATE July 14, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2406			0.40	Trench #1 - W 0+00 - 0+05				
2407			0.04	0+05 - 0+10				
2408			0.02	0+10 - 0+15				
2409			0.01	0+15 - 0+20				
2410			0.01	0+20 - 0+25				
2411			0.03	0+25 - 0+30				
2412			0.17	0+30 - 0+35				
2413			0.03	0+35 - 0+40				
2414			0.02	0+40 - 0+45				
2415			0.54	0+45 - 0+50				
2416			0.19	0+50 - 0+55				Trench #2
2417			0.21	0+55 - 0+60				
2418			0.43	0+60 - 0+65				
2419			0.27	0+65 - 0+70				
2420			0.19	0+70 - 0+75				
2421			0.32	0+75 - 0+80				
2422			0.59	0+80 - 0+85				
2423			0.88	0+85 - 0+90				
2424			0.75	0+90 - 0+95				
2425			0.37	0+95 - 1+00				
2426			0.42	1+00 - 1+05				Entered in assay log + BAS
2427			0.45	1+05 - 1+10				
2428			0.30	1+10 - 1+15				
2429			0.73	1+15 - 1+20				
2430			0.40	1+20 - 1+25				

PRELIMINARY

REGISTERED ASSAYER
5852
FLORES
Arizona U.S.A.

3226 East 46th Street

Phone 624-0049

NORTH STAR Proj.

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International Incorporated

DATE July 14, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2431			0.49	Trench # 1+25 -	I - W 1+30			Trench #7
2432			0.20	1+30 -	1+35			
2433			0.21	1+35 -	1+40			

PRELIMINARY

Entered in Assay Log & BAS

REGISTERED ASSAYER
6852
PETER S. FLORES
Signed

3226 East 46th Street Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc. DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
1930			0.29	Trench # 6-W 0+50 - 0+55			3.00	
1931			0.12	0+55 - 0+60			1.85	
1932			0.06	0+60 - 0+65			1.70	
1933			0.71	0+65 - 0+70			2.65	
1934			0.69	0+70 - 0+75			2.30	
1935			0.04	0+75 - 0+80			1.35	
1936			0.02	0+80 - 0+85			1.40	
1937			0.01	0+85 - 0+90			1.20	
1938			0.02	0+90 - 0+95			1.60	Trench #6.
1939			0.01	0+95 - 1+00			1.20	
1941			0.01	1+00 - 1+05			1.20	
1942			0.06	1+05 - 1+10			2.05	
1943			0.11	1+10 - 1+15			1.65	
1944			0.07	1+15 - 1+20				
1945			0.16	6-W Ext 1 0+00 - 0+05				
1946			0.62	0+05 - 0+10				
1947			3.52	0+10 - 0+12				
1948			0.19	0+12 - 0+15				

PRELIMINARY

Entered in Log Book

REGISTERED ASSAYER ARIZONA U.S.A.

7/30/70

CHARGES $ 71.75

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
1930			0.29				3.00	
1931			0.12				1.85	
1932			0.06				1.70	
1933			0.71				2.65	
1934			0.69				2.30	
1935			0.04				1.35	
1936			0.02				1.40	
1937			0.01				1.20	
1938			0.02				1.60	
1939			0.01				1.20	
1941			0.01				1.20	
1942			0.06				2.05	
1943			0.11				1.65	
1944			0.07					
1945			0.16					
1946			0.62					
1947			3.52					
1948			0.19					

Entered on BAS ML

Entered in Assay Log

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE FLORES Arizona U. S. A.

Pete Flores 7/30/70

CHARGES $ 71.75

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY _____

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2201			0.44	Trench 6-E 0+00 - 0+05				
2202			0.16	0+05 - 0+10				
2203			0.04	0+10 - 0+15				
2204			0.13	0+15 - 0+20				
2205			0.10	0+20 - 0+25				
2206			0.03	0+25 - 0+30				
2207			0.09	0+30 - 0+35				
2208			0.09	0+35 - 0+40				
2209			0.17	0+40 - 0+45				Trench #6
2210			0.23	0+45 - 0+50				
2211			0.15	0+50 - 0+55				
2212			0.46	0+55 - 0+60				
2213			0.07	0+60 - 0+65				
2214			0.05	0+65 - 0+70				
2215			0.07	0+70 - 0+75				
2216			0.11	0+75 - 0+80				
2217			0.08	0+80 - 0+85				
2218			0.01	0+85 - 0+90				
2219			Trace	0+90 - 0+95				
2220			0.04	0+95 - 1+00				
2221			0.51	vert samp 2, 6-W ~~[illegible]~~ 0+00 - 0+05				
2222			0.79	0+05 - 0+10				
2223			0.72	0+10 - 0+15				
2224			0.03	vert samp 3 6-W 0+00 - 0+05				
2225			0.04	0+05 - 0+10				

PRELIMINARY

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REGISTERED ASSAYER ... FLORES ... Arizona U.S.A.

7/30/70

CHARGES $ 50.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2201			0.44					
2202			0.16					
2203			0.04					
2204			0.13					
2205			0.10					
2206			0.03					
2207			0.09					
2208			0.09					
2209			0.17					
2210			0.23					
2211			0.15					
2212			0.46					
2213			0.07					
2214			0.05					
2215			0.07					
2216			0.11					
2217			0.08					
2218			0.01					
2219			Trace					
2220			0.04					
2221			0.51					
2222			0.79					
2223			0.72					
2224			0.03					
2225			0.04					

Entered on B A S rd

Entered in assay Log

REGISTERED ASSAYER
CERTIFICATE NO. 6862
PETER S. FLORES
Date Signed 7/30/70
Arizona U. S. A.

CHARGES $ 50.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY [illegible]

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ/TON	SILVER OZ/TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2226			0.08	Trench 6-W vert 3 0+10 - 0+15				
2227			0.46	Trench 6-E Vert 1 0+00 - 0+05				
2228			0.54	0+05 - 0+10				
2229			0.05	0+10 - 0+15				
2230			0.79	Trench 6-E Vert 2 0+00 - 0+05				Trench #6
2231			0.12	0+05 - 0+10				
2232			0.16	0+10 - 0+15				
2233			0.01	Trench 6-E, Vert 3 0+00 - 0+05				
2234			0.02	0+05 - 0+10				
2235			0.04	0+10 - 0+15				—
2236			0.49	Trench 1-E Vert 1 0+00 - 0+05				
2237			0.43	0+05 - 0+10				
2238			0.58	Trench 1-E Vert. 2 0+00 - 0+05				
2239			0.68	Trench 1-E vert 3 0+00 - 0+05				Trench #1
2240			0.89	0+05 - 0+10				
2241			0.04	Trench 1-E Vert 4 0+00 - 0+05				
2242			0.34	0+05 - 0+10				
2243			0.23	0+10 - 0+15				
2244			0.79	Trench 1-E Vert 3B 0+00 - 0+05				
2245			0.53	Trench 1-E vert 5 0+00 - 0+05				—
2246			0.51	Trench 2-N vert 1 0+00 - 0+05				
2247			0.26	Trench 2-N, Vert 2 0+00 - 0+05				Trench #2
2248			0.14	Trench #2-N vert 1A 0+00 - 0+05				
2249			0.52	Trench 2-N Vert 1B 0+00 - 0+05				
2250			0.17	Trench 2-N Vert. 3 0+00 - 0+05				

PRELIMINARY

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REGISTERED ASSAYER ... FLORES ... 7/30/70 ... Arizona U.S.A.

CHARGES $ 50.00

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Desco International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2226			0.08					
2227			0.46					
2228			0.54					
2229			0.05					
2230			0.79					
2231			0.12					
2232			0.15					
2233			0.01					
2234			0.02					
2235			0.04					
2236			0.49					
2237			0.43					
2238			0.50					
2239			0.58					
2240			0.89					
2241			0.04					
2242			0.34					
2243			0.23					
2244			0.79					
2245			0.53					
2246			0.51					
2247			0.26					
2248			0.14					
2249			0.52					
2250			0.17					

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Entered on Assay Log

REGISTERED ASSAYER 3852 PETE S. FLORES 7/30/70 Tucson Arizona U. S. A.

CHARGES $ 50.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2301			0.29	Trench #6-W vert 4 0+00 - 0+05				
2302			0.08	0+05 - 0+10				Trench #6
2303			0.08	0+10 - 0+15				—
2304			0.10	Trench 7-S vert 1 0+00 - 0+05				Trench # 7
2305			0.07	Trench 7-S vert 2 0+00 - 0+05				—
2306			1.11	Trench #1 vert #6 0+00 - 0+05				
2307			0.67	Trench #1 vert 7 0+00 - 0+05				Trench #1
2308			0.68	Trench #1 vert 8 0+00 - 0+05				—

PRELIMINARY

Entered in Assay Log ABAS

REGISTERED ASSAYER CERTIFICATE NO. 6859 PETE S. FLORES Date Signed 7/30/70 Arizona U. S. A.

CHARGES $ 16.00

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2301			0.29					
2302			0.08					
2303			0.08					
2304			0.10					
2305			0.07					
2306			1.11					
2307			0.67					
2308			0.68					

Entered on BAS jd

Entered in Assay Log

REGISTERED ASSAYER
CERTIFICATE NO. 6852
PETE S. FLORES
Date Signed 7/30/70
Arizona U. S. A.

CHARGES $ 16.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Noble Exploration Co.

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ/TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2434			0.03	Trench # 2-W [illegible] vert sample			1.40	
2436			0.04	Trench # 2-W 0+05 - South vert Samp. 0+10			1.45	Trench # 2
2435			0.01	Trench # 2-W North vert samp. 0+00 - 0+05			1.15	
2437			0.03	Trench # 2-W North vert samp. 0+05 - 0+10			1.25	
2438			0.15	Trench # 3 vert samp #1			1.40	
2439			1.55	Trench # 3 vert Samp #2			1.90	Trench # 3
2440			0.31	Trench # 3 vert Samp #3			1.95	
2441			0.70	Trench # 3 vert Samp # 4			1.55	
2442			0.01	Trench 4-W 0+00 - 0+05			2.45	
2443			Trace	0+05 - 0+10			1.85	
2444			0.02	0+10 - 0+15			2.50	Trench # 4
2445			0.08	0+15 - 0+20			2.80	
2446			0.01	0+20 - 0+25			2.95	
2447			0.02	0+25 - 0+30			2.60	
2448			0.03	Trench # 5-E upper ltor. 0+00 - 0+05			3.10	
2449			0.46	0+05 - 0+10 " "			1.85	Trench # 5
2450			0.86	0+10 - 0+15 " "			4.30	

PRELIMINARY

Entered in S.O.B. as per BAS

Ted L. Stroh

7/30/70

CHARGES $ 80.75

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2434			0.03				1.40	
2435			0.04				1.45	
2436			0.01				1.15	
2437			0.03				1.25	
2438			0.15				1.40	
2439			1.55				1.90	
2440			0.31				1.95	
2441			0.70				1.55	
2442			0.01				2.45	
2443			Trace				1.85	
2444			0.02				2.50	
2445			0.08				2.80	
2446			0.01				2.95	
2447			0.02				2.60	
2448			0.03				3.10	
2449			0.46				1.85	
2450			0.86				4.30	

Entered in Assay Log

Entered on BAS

REGISTERED ASSAYER CERTIFICATE NO. 1952 FLORES Date Signed Arizona U. S. A.

Peter S. Flores 7/30/70

CHARGES $ 80.75

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY [illegible]

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1926			0.03	Trench # 6-W 0+35 - 0+40			1.40	Trench #6
1927			0.22	0+40 - 0+45			1.50	
1928			0.94	0+45 - 0+50			2.00	
1929			0.33	Trench # 5-E low Hor, 0+15 - 0+20			2.40	Trench # 5

PRELIMINARY

Entered in Assay Log + OAS

Peter S. Flore

7/30/70

REGISTERED ASSAYER CERTIFICATE 6650 ... TUCSON Arizona U. S. A.

CHARGES $ 19.00

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1926			0.03				1.40	
1927			0.22				1.90	
1928			0.94				3.20	
1929			0.33				2.40	

Entered in Assay Log

Entered on BAS JD

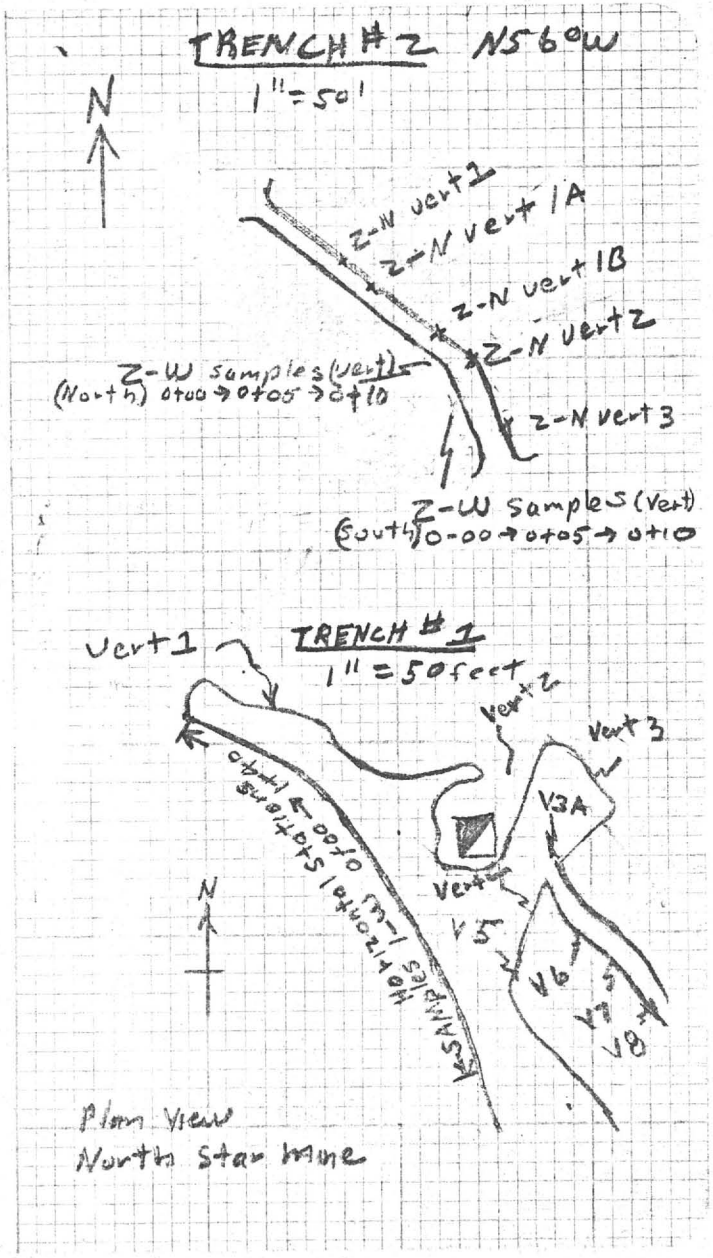
REGISTERED ASSAYER CERTIFICATE NO. 6852 PETER FLORES Date Signed 7/30/70 Arizona U. S. A.

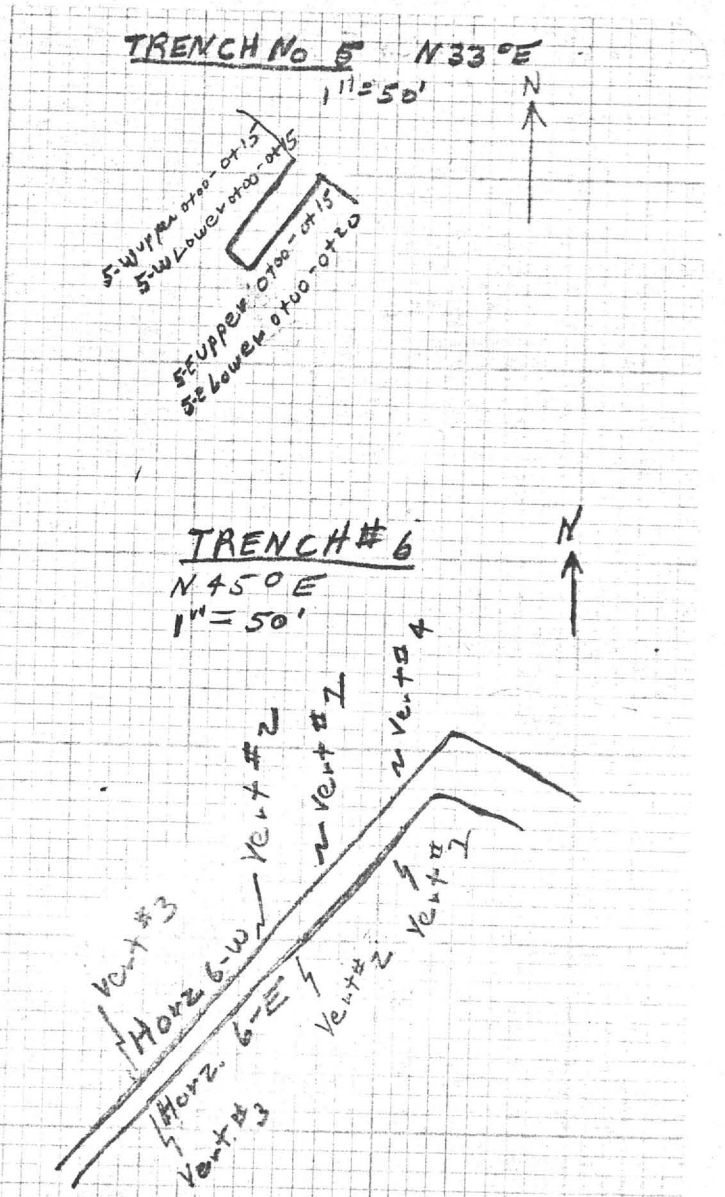
Peter S. Flores

CHARGES $ 19.00

ASSAYER - CHEMIST

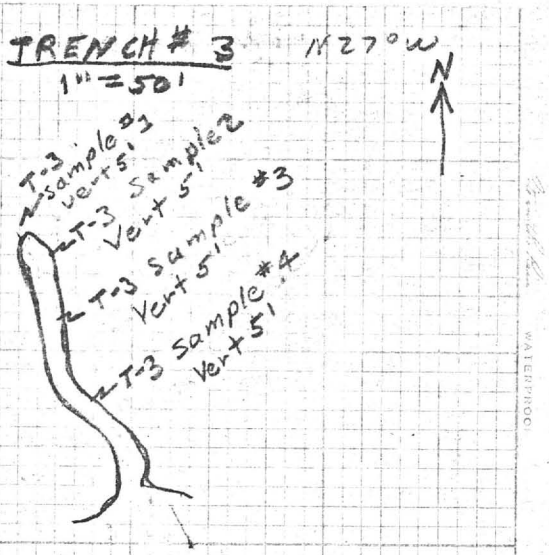
North Star Mine
Plan of Trenches Sampled (see assay sheets for values)

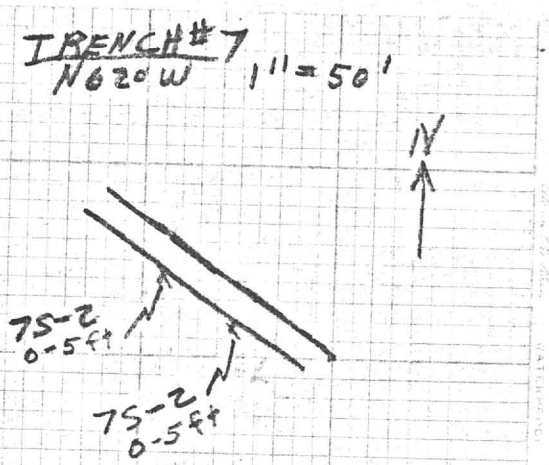


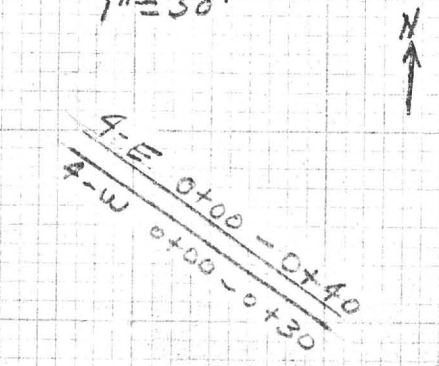


PRELIMINARY

North Star Mine
Plan of Trenches Sampled. (see assay sheets for values)







PRELIMINARY

3226 East 46th Street Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY [illegible]

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1901			0.02	Trench #5-E Low Hor. 0+00 - 0+05			2.25	
1902			0.07	0+05 - 0+10	" "		2.60	
1903			0.11	0+10 - 0+15	" "		2.00	
1904			0.08	Trench 5-W upper Hor. 0+00 - 0+05			3.80	Trench #5
1905			0.27	0+05 - 0+10	" "		1.75	
1906			0.09	0+10 - 0+15	" "		1.60	
1907			0.05	Trench 5-W Low Hor 0+00 - 0+05			3.25	
1908			0.30	0+05 - 0+10	" "		2.75	
1909			0.05	0+10 - 0+15	" "		1.85	
1910			0.41	Trench #4-E 0+00 - 0+05			3.85	
1911			0.32	0+05 - 0+10			3.55	
1912			0.60	0+10 - 0+15			3.90	
1913			0.51	0+15 - 0+20			3.50	Trench #4
1914			1.60	0+20 - 0+25			5.95	
1915			0.03	0+25 - 0+30			3.20	
1916			0.02	0+30 - 0+35			3.05	
1917			0.06	0+35 - 0+40			3.25	
1918			0.07	0+40 - 0+45			2.30	
1919			0.02	Trench #6-W 0+00 - 0+05			2.40	
1920			0.28	0+05 - 0+10			1.95	
1921			1.08	0+10 - 0+15			2.00	Trench #6
1922			0.10	0+15 - 0+20			2.10	
1923			0.14	0+20 - 0+25			1.45	
1924			0.10	0+25 - 0+30			2.25	
1925			0.01	0+30 - 0+35			1.05	

PRELIMINARY

Entered in Assay Log

REGISTERED ASSAYER
FLORES
Signed
Arizona U. S. A.
7/30/70

CHARGES $ 118.75

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1901			0.02				2.25
1902			0.07				2.60
1903			0.11				2.00
1904			0.08				3.80
1905			0.27				1.75
1906			0.09				1.60
1907			0.05				3.25
1908			0.30				2.75
1909			0.05				1.85
1910			0.41				3.85
1911			0.32				3.55
1912			0.60				3.90
1913			0.51				3.60
1914			1.60				5.95
1915			0.03				3.20
1916			0.02				3.05
1917			0.05				3.25
1918			0.07				2.30
1919			0.02				2.40
1920			0.28				1.95
1921			1.08				2.00
1922			0.10				2.10
1923			0.14				1.45
1924			0.10				2.25
1925			0.01				1.05

Entered on BAS [illegible]

Entered in Assay Log

REGISTERED ASSAYER CERTIFICATE NO. 6852 FLORES Date Signed 7/30/70 Arizona U. S. A.

CHARGES $ 118.75

ASSAYER - CHEMIST

3226 East 46th Street

Phone 621-0010

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PRO.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 12, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2244								.30
2245								.30
2246								Trace
2247								Trace
2248								.02
2249								Trace
2250								Trace
2301								.50
2302								.20
2303								5.15
2304								Trace
2305								Trace
2306								.50
2307								Trace
2308								Trace
2434								Trace
2435								.20
2436								Trace
2437								.20
2438								Trace
2439								.20
2440								.25
2441								Trace
2442								2.60
2443								4.90

Entered in Assay Log

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date 8/12/70 Arizona U. S. A.

INVOICE # 5118

CHARGES $ 106.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PRO.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 12, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2444								6.50
2445								3.50
2446								5.84
2447								5.90
2448								.30
2449								2.75
2450								.50

P3-0 Entered on B A S Inc.

Entered on assay log

INVOICE # 5118

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date Signed 8/12/70 Arizona U. S. A.

CHARGES $ 29.75

ASSAYER-CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJ.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 14, 1970

Submitted 7/23/70

SAMPLE MARKED	GOLD OZ/TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2239								1.42
2240								1.42
2241								1.37
2242								.59
2243								.54

Entered in Book 30

Entered in Assay Log

INVOICE # 5133

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date Signed 8/4/70 Arizona U. S. A.

CHARGES $ 21.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJ.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 14, 1970

Submitted 7/23/70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2214								1.08
2215								.73
2216								1.22
2217								.73
2218								1.81
2219								1.32
2220								.73
2221								.44
2222								.64
2223								2.30
2224								.88
2225								.64
2226								.54
2227								1.81
2228								.88
2229								4.46
2230								.49
2231								1.76
2232								.83
2233								.29
2234								1.22
2235								.93
2236								1.22
2237								.59
2238								1.22

Entered on BAS

Entered in Assay Log

INVOICE # 5133

CHARGES $ 106.25

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE FLORES 8/4/70 Arizona U. S. A.

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc. DATE Sept. 23, 1970

Mr. T. Griepentrog Project # A 003P1 670 Date Submitted 9-17-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
907 30-35'			0.04 ✓				
908 35-40'			0.03 ✓				
909 40-45			0.02 ✓				
910 45-50			0.41 ✓				
911 50-55			0.08 ✓				
912 55-60			0.02 ✓				
913 60-65			0.01 ✓				
914 65-70			0.02 ✓				
915 70-75			Trace ✓				
916 75-80			0.10 ✓				
917 80-85			0.22 ✓				
918 85-90			0.10 ✓				
919 90-95			0.05 ✓				
920 95-100			0.06 ✓				
921 100-105			0.11 ✓				
922 105-110			0.09 ✓				
923 110-115			0.10 ✓				
924 115-120			0.19 ✓				
925 120-125			0.07 ✓				
926 125-130			0.08 ✓				
927 130-135			0.22 ✓				
928 135-140			0.11 ✓				
929 140-145			0.22 ✓				
930 145-150			0.22 ✓				
931 150-155			0.11 ✓				

1 Hole

Invoice # 5333

CHARGES $ 50.00

9/23/70

ASSAYER - CHEMIST

3226 East 46th Street

N. Star # 552

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Mr. T. Griepentrog — Essex International, Inc. Project # A 003 P1 670 — DATE Sept. 23, 1970 — Date Submitted 9-17-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
882 0-20'			0.13 ✓				
883 20-40'			0.06 ✓				
884 40-60'			0.03 ✓				
885 60-80'			0.02 ✓				
886 80-100'			0.03 ✓				
887 100-120'			0.03 ✓				
888 120-140'			0.02 ✓				
889 140-160'			0.01 ✓				
890 160-180'			0.06 ✓				
891 0-20'			0.02 ✓				
892 20-40'			0.01 ✓				
893 40-60'			0.02 ✓				
894 60-80'			0.02 ✓				
895 80-100'			0.03 ✓				
896 100-120			0.01 ✓				
897 120-140			0.01 ✓				
898 140-160			0.01 ✓				
899 160-180			0.01 ✓				
900 180-200			0.01 ✓				
901 0-5'			0.03 ✓				
902 5-10'			0.13 ✓				
903 10-15'			0.03 ✓				
904 15-20'			0.04 ✓				
905 20-25'			0.08 ✓				
906 25-30			0.24 ✓				

Hole 2 — Hole 3 — Hole 1

Invoice # 5333

CHARGES $ 50.00

REGISTERED ASSAYER U.S.A.

9/23/70

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.

Mr. T. Griepentrog Project # A 003P1670 Date Submitted 9-17-70

DATE Sept. 23, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
932 155-160			0.08 ✓				
933 160-165			0.04 ✓				
934 165-170			0.06 ✓				
935 170-175			0.07 ✓				
936 175-180			0.03 ✓				

140 le Z

Robert J. Jones

9/23/70

Invoice # 5333

CHARGES $ 10.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Mr. T. Griepentrog — Essex International, Inc. Project # A 003 P1 670 — DATE Sept. 23, 1970 — Date Submitted 9-17-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1041 0-5'			0.05 ✓				
1042 5-10			0.17 ✓				
1043 10-15			0.18 ✓				
1044 15-20			0.05 ✓				
1045 20-25			0.03 ✓				
1046 25-30			0.03 ✓				
1047 30-35			0.03 ✓				
1048 35-40			0.02 ✓				
1049 40-45			0.06 ✓				
1050 45-50			0.04 ✓				
1051 50-55			0.02 ✓				
1052 55-60			0.02 ✓				
1053 60-65			0.03 ✓				
1054 65-70			0.05 ✓				
1055 70-75			0.08 ✓				
1056 75-80			0.05 ✓				
1057 80-85			0.02 ✓				
1058 85-90			0.03 ✓				
1059 90-95			0.04 ✓				
1060 95-100			0.05 ✓				
1061 100-105			0.05 ✓				
1062 105-110			0.04 ✓				
1063 110-115			0.03 ✓				
1064 115-120			0.07 ✓				
1065 120-125			0.03 ✓				

Hole #4

Invoice # 5333

CHARGES $ 50.00

REGISTERED ASSAYER

5/23/71

ASSAYER - CHEMIST

· 3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS · CHEMISTS · METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Mr. T. Griepentrog — Essex Intenational, Inc. Project # A 003 PT 670

DATE Sept. 23, 1970 — Date Submitted 9-17-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1066 125-130			0.08 ✓				
1067 130-135			0.22 ✓				
1068 135-140			0.21 ✓				
1069 140-145			0.06 ✓				
1070 145-150			0.03 ✓				
1071 150-155			0.04 ✓				
1072 155-160			0.05 ✓				
1073 160-165			0.06 ✓				
1074 165-170			0.06 ✓				
1075 170-175			0.03 ✓				
1076 175-180			0.08 ✓				
1077 180-185			0.05 ✓				
1078 185-190			0.06 ✓				
1079 190-195			0.02 ✓				
1080 195-200			0.04 ✓				

140 le

Invoice # 5333

CHARGES $ 30.00

9/23/70

ASSAYER · CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Mr. T. Griepentrog — Essex International, Inc. Project # A 003 P1 670

DATE Sept. 24, 1970 — Date Submitted 9-20-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1081 0-5			0.02 ✓				
1082 5-10			0.02 ✓				
1083 10-15			0.01 ✓				
1084 15-20			0.04 ✓				
1085 20-25			0.01 ✓				
1086 25-30			0.01 ✓				
1087 30-35			Trace ✓				
1088 35-40			0.70 ✓				
1089 40-45			2.51 ✓				
1090 45-50			0.07 ✓				
1091 50-55			0.04 ✓				
1092 60-65			0.03 ✓				
1093 65-70			0.01 ✓				
1094 70-75			0.03 ✓				
1095 75-80			0.01 ✓				
1096 80-85			0.02 ✓				
1097 85-90			Trace ✓				
1098 90-95			0.01 ✓				
1099 95-100			0.03 ✓				
1100 55-60			0.05 ✓				

Hole 5

Invoice # 5333

CHARGES $ 40.00

9/24/70

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc. DATE Sept. 24, 1970

Mr. T. Griepentrog Project # A 003 P1 670 Date Submitted 9-20-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1451 100-105			0.01				
1452 105-110			0.02				
1453 110-115			0.04				
1454 115-120			0.01				
1455 120-125			0.04	5			
1456 125-130			0.02	Hole			
1457 130-135			0.01				
1458 135-140			0.01				
1459 140-145			0.05				
1460 145-150			0.02				

Invoice # 5333

CHARGES $ 20.00

REGISTERED ASSAYER Arizona U. S. A.

9/24/70

ASSAYER-CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS · CHEMISTS · METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project #A 003 P1 670

DATE Sept. 27, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1464 0-5'			0.14 ✓				
1465 5-10'			0.02 ✓				
1466 10-15'			0.05 ✓				
1467 15-20'			0.04 ✓				
1468 20-25'			0.03 ✓				
1469 42-46'			0.06 ✓				
1470 46-51'			0.06 ✓				
1471 51'-55'			0.03 ✓				
1472 55-60			0.06 ✓				
1473 60-65'			0.02 ✓				
1474 65-70			0.02 ✓				
1475 70-75			0.01 ✓				
1476 82-85			0.02 ✓	Hole			
1477 85-90			0.01 ✓				
1478 90-95			0.01 ✓				
1479 95-100			0.07 ✓				
1480 100-105'			0.02 ✓				
1481 105-110			0.02 ✓				
1482 110-115'			0.04 ✓				
1483 115-120			0.10 ✓				
1484 120-125'			0.03 ✓				
1485 125-130			0.04 ✓				
1486 130-135'			0.03 ✓				
1487 135-140			0.01 ✓				
1488 140-145'			0.01 ✓				

REGISTERED ASSAYER
CERTIFICATE NO. 5852
PETE S. FLORES
Arizona U. S. A.

9-27-70

Invoice # 5340

CHARGES $ 50.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project # A 003 P1 670

DATE Sept. 27, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1489 145-150			0.02 ✓				
1490 150-155			0.01 ✓	1-6146			
1491 155-160			0.02 ✓				
1492 160-165			0.01 ✓				
1493 165-170			0.01 ✓				

Invoice # 5340

CHARGES $ 10.00

9/27/70

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Sept. 29, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1494 170-175			0.07	Hole 6				
1495 175-180			0.03					
1496 180-185			0.02					
1497 185-190			0.02					
1498 190-195			0.03					
1499 195-200			0.02					

REGISTERED ASSAYER
CERTIFICATE NO. 6252
PETE S. FLORES
Date Signed 9/29/70
Arizona U. S. A.

Invoice # 5345

CHARGES $ 12.00

ASSAYER-CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS · CHEMISTS · METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project # A 003 P1 670

DATE Sept. 27, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
NS # 6 25-33			0.01				
33½			0.02				
33½-35			0.02				
35-36			0.01				
36-39			0.02				
39-42			0.01				
75-78			0.01				
78-82			Trace				

No 6

Invoice # 5340

CHARGES $ 16.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project # A 003 P1 670

DATE Sept. 28, 1970
Date Submitted 9-26-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1101 0-5'			0.02 ✓					
1102 5-10'			0.02 ✓					
1103 10-15'			0.02 ✓					
1104 15-20'			0.03 ✓					
1105 20-25'			0.09 ✓					
1106 25-30'			0.03 ✓					
1108 35-40			0.09 ✓					
1109 40-45			0.03 ✓					
1110 45-50			0.03 ✓					
1111 50-55			0.07 ✓					
1112 55-60			0.05 ✓					
1113 60-65			0.14 ✓					
1114 65-70			0.02 ✓					
1115 70-75			0.02 ✓					
1116 75-80			0.01 ✓					
1117 80-85			0.01 ✓					
1118 85-90			0.03 ✓					
1119 90-95			0.09 ✓					
1120 95-100			0.06 ✓					
1121 100-105			0.06 ✓					
1122 105-110			0.10 ✓					
1123 110-115			0.07 ✓					
1124 115-120			0.10 ✓					
1125 120-125			0.09 ✓					
1126 125-130			0.11 ✓					

Hole 7

Invoice # 5343
CHARGES $ 50.00

REGISTERED ASSAYER
Arizona U. S. A.
9/28/70

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS · CHEMISTS · METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc. DATE Sept. 28, 1970

Project # A 003 P1 670 Date Submitted 9-26-70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
NO 1127							
1128 135-140			0.05 ✓				
1129 140-145			0.12 ✓				
1130 145-150			0.22 ✓				
1131 150-155			0.07 ✓				
1132 155-160			0.05 ✓				
1133 160-165			0.03 ✓				
1134 165-170			0.04 ✓	Hole 7			
1135 170-175			0.16 ✓				
1136 175-180			0.05 ✓				
1137 180-185			0.08 ✓				
1138 185-190			0.09 ✓				
1139 190-195			0.10				
1140 195-200			0.04 ✓				
1150 30-35			0.40 ✓				

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Arizona U. S. A. 9-28-70

Invoice # 5343

CHARGES $ 28.00

ASSAYER-CHEMIST

3226 East 46th Street

Essex North Star Proj.

Phone 624-0049

Jim Sherman
Don Cooley

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Incorporated

DATE July 14, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2406			0.40	Trench #1-W 0+00 - 0+05				
2407			0.04	0+05 - 0+10				
2408			0.02	0+10 - 0+15				
2409			0.01	0+15 - 0+20				
2410			0.01	0+20 - 0+25				
2411			0.03	0+25 - 0+30				
2412			0.17	0+30 - 0+35				
2413			0.03	0+35 - 0+40				
2414			0.02	0+40 - 0+45				
2415			0.54	0+45 - 0+50				
2416			0.19	0+50 - 0+55				Trench #1
2417			0.21	0+55 - 0+60				
2418			0.43	0+60 - 0+65				
2419			0.27	0+65 - 0+70				
2420			0.19	0+70 - 0+75				
2421			0.32	0+75 - 0+80				
2422			0.59	0+80 - 0+85				
2423			0.88	0+85 - 0+90				
2424			0.75	0+90 - 0+95				
2425			0.37	0+95 - 1+00				
2426			0.42	1+00 - 1+05				
2427			0.45	1+05 - 1+10				
2428			0.30	1+10 - 1+15				
2429			0.73	1+15 - 1+20				
2430			0.40	1+20 - 1+25				

CHARGES $50.00

REGISTERED ASSAYER
CERTIFICATE NO. 8852
STATE OF ARIZONA U.S.A.

ASSAYER - CHEMIST

North Star Proj.

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International Incorporated

DATE July 14, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2431			0.49	Trench # I - W 1+25 - 1+30				Trench # 1
2432			0.20	1+30 - 1+35				
2433			0.21	1+35 - 1+40				

REGISTERED ASSAYER 6852 FLORIDA Signed Arizona U. S. A.

CHARGES 5.00

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
1930			0.29	Trench # 6-W 0+50 - 0+55			3.00	
1931			0.12	0+55 - 0+60			1.85	
1932			0.06	0+60 - 0+65			1.70	
1933			0.71	0+65 - 0+70			2.65	
1934			0.69	0+70 - 0+75			2.30	
1935			0.04	0+75 - 0+80			1.35	
1936			0.02	0+80 - 0+85			1.40	
1937			0.01	0+85 - 0+90			1.20	
1938			0.02	0+90 - 0+95			1.60	Trench #6.
1939			0.01	0+95 - 1+00			1.20	
1941			0.01	1+00 - 1+05			1.20	
1942			0.06	1+05 - 1+10			2.05	
1943			0.11	1+10 - 1+15			1.65	
1944			0.07	1+15 - 1+20				
1945			0.16	6-W Vert 1 0+00 - 0+05				
1946			0.62	0+05 - 0+10				
1947			3.52	0+10 - 0+12				
1948			0.19	0+12 - 0+15				

REGISTERED ASSAYER ... Arizona U.S.A. 7/30/70

CHARGES $ 71.75

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ/TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2201			0.44	Trench 6-E 0+00 - 0+05				
2202			0.16	0+05 - 0+10				
2203			0.04	0+10 - 0+15				
2204			0.13	0+15 - 0+20				
2205			0.10	0+20 - 0+25				
2206			0.03	0+25 - 0+30				
2207			0.09	0+30 - 0+35				
2208			0.09	0+35 - 0+40				
2209			0.17	0+40 - 0+45				Trench #6
2210			0.23	0+45 - 0+50				
2211			0.15	0+50 - 0+55				
2212			0.46	0+55 - 0+60				
2213			0.07	0+60 - 0+65				
2214			0.05	0+65 - 0+70				
2215			0.07	0+70 - 0+75				
2216			0.11	0+75 - 0+80				
2217			0.08	0+80 - 0+85				
2218			0.01	0+85 - 0+90				
2219			Trace	0+90 - 0+95				
2220			0.04	0+95 - 1+00				
2221			0.51	Vert Samp 2, 6-W 0+00 - 0+05				
2222			0.79	0+05 - 0+10				
2223			0.72	0+10 - 0+15				
2224			0.03	Vert Samp 3 6-W 0+00 - 0+05				
2225			0.04	0+05 - 0+10				

REGISTERED ASSAYER 6882 FLORES 7/30/70 Arizona U. S. A.

CHARGES $ 50.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Duval International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ/TON	SILVER OZ/TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2226			0.08	Trench 6-W Vert 3 0+10 - 0+15				
2227			0.46	Trench 6-E Vert 1 0+00 - 0+05				
2228			0.54	0+05 - 0+10				
2229			0.05	0+10 - 0+15				
2230			0.79	Trench 6-E Vert 2 0+00 - 0+05				Trench #6
2231			0.12	0+05 - 0+10				
2232			0.16	0+10 - 0+15				
2233			0.01	Trench 6-E, Vert 3 0+00 - 0+05				
2234			0.02	0+05 - 0+10				
2235			0.04	0+10 - 0+15				—
2236			0.49	Trench 1-E Vert 1 0+00 - 0+05				
2237			0.43	0+05 - 0+10				
2238			0.58	Trench 1-E Vert. 2 0+00 - 0+05				
2239			0.68	Trench 1-E Vert 3 0+00 - 0+05				Trench
2240			0.89	0+05 - 0+10				#1
2241			0.04	Trench 1-E Vert 4 0+00 - 0+05				
2242			0.34	0+05 - 0+10				
2243			0.23	0+10 - 0+15				
2244			0.79	Trench 1-E Vert 3B 0+00 - 0+05				
2245			0.53	Trench 1-E Vert 5 0+00 - 0+05				—
2246			0.51	Trench 2-N Vert 1 0+00 - 0+05				
2247			0.26	Trench 2-N, Vert 2 0+00 - 0+05				Trench
2248			0.14	Trench # 2-N Vert 1A 0+00 - 0+05				#2
2249			0.52	Trench 2-N Vert 1B 0+00 - 0+05				
2250			0.17	Trench 2-N Vert. 3 0+00 - 0+05				

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date Signed 7/30/70 Arizona U. S. A.

CHARGES $ 50.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2301			0.29	Trench #6 W Vert 4 0+00 - 0+05				
2302			0.08	0+05 - 0+10				Trench #6
2303			0.08	0+10 - 0+15				
2304			0.10	Trench 7-S Vert 1 0+00 - 0+05				
2305			0.07	Trench 7-S Vert 2 0+00 - 0+05				Trench # 7.
2306			1.11	Trench #1 Vert #6 0+00 - 0+05				
2307			0.67	Trench #1 Vert 7 0+00 - 0+05				Trench #1
2308			0.68	Trench #1 Vert 8 0+00 - 0+05				

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date Signed 7/30/70 Arizona U. S. A.

CHARGES $ 16.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
2434			0.03	Trench # 2-W 0+00-0+05 South vert sample			1.40	
2435			0.04	Trench # 2-W 0+05-South vert Samp. 0+10			1.45	Trench #2
2436			0.01	Trench # 2-W North vert samp. 0+00-0+05			1.15	
2437			0.03	Trench # 2-W North vert samp. 0+05-0+10			1.25	
2438			0.15	Trench # 3 vert samp #1			1.40	
2439			1.55	Trench # 3 vert samp #2			1.90	Trench # 3
2440			0.31	Trench # 3 vert Samp #3			1.95	
2441			0.70	Trench # 3 vert Samp #4			1.55	
2442			0.01	Trench 4-W 0+00-0+05			2.45	
2443			Trace	0+05-0+10			1.85	
2444			0.02	0+10-0+15			2.50	Trench #4
2445			0.08	0+15-0+20			2.80	
2446			0.01	0+20-0+25			2.95	
2447			0.02	0+25-0+30			2.60	
2448			0.03	Trench # 5-E upper Hor. 0+00-0+05			3.10	
2449			0.46	0+05-0+10 "	"		1.85	Trench #5
2450			0.86	0+10-0+15 "	"		4.30	

REGISTERED ASSAYER CERTIFICATE NO. 6852 FLORES Signed Arizona U. S. A.

7/30/70

CHARGES $ 80.75

ASSAYER-CHEMIST

3226 East 46th Street Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Pinnacle International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1926			0.03	Trench #6-W 0+35 - 0+40			1.40	Trench #6
1927			0.22	0+40 - 0+45			1.90	
1928			0.94	0+45 - 0+50			3.20	
1929			0.33	Trench #5-E low Hor, 0+15 - 0+20			2.40	Trench #5

REGISTERED ASSAYER CERTIFICATE 6854 STATE OF FLORIDA 7/30/70 Arizona U. S. A.

CHARGES $ 19.00

ASSAYER - CHEMIST

3226 East 46th Street Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International

DATE July 30, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1901			0.02	Trench #5-E Low Hor. 0+00 - 0+05			2.25	
1902			0.07	0+05 - 0+10	" "		2.60	
1903			0.11	0+10 - 0+15	" "		2.00	
1904			0.08	Trench 5-W upper Hor. 0+00 - 0+05			3.80	Trench #5
1905			0.27	0+05 - 0+10	" "		1.75	
1906			0.09	0+10 - 0+15	" "		1.60	
1907			0.05	Trench 5-W Low Hor 0+00 - 0+05			3.25	
1908			0.30	0+05 - 0+10	" "		2.75	
1909			0.05	0+10 - 0+15	" "		1.85	
1910			0.41	Trench #4-E 0+00 - 0+05			3.85	
1911			0.32	0+05 - 0+10			3.55	
1912			0.60	0+10 - 0+15			3.90	
1913			0.51	0+15 - 0+20			3.60	Trench #4
1914			1.60	0+20 - 0+25			5.95	
1915			0.03	0+25 - 0+30			3.20	
1916			0.02	0+30 - 0+35			3.05	
1917			0.06	0+35 - 0+40			3.25	
1918			0.07	0+40 - 0+45			2.30	
1919			0.02	Trench #6-W 0+00 - 0+05			2.40	
1920			0.28	0+05 - 0+10			1.95	
1921			1.08	0+10 - 0+15			2.00	Trench #6
1922			0.10	0+15 - 0+20			2.10	
1923			0.14	0+20 - 0+25			1.45	
1924			0.10	0+25 - 0+30			2.25	
1925			0.01	0+30 - 0+35			1.05	

REGISTERED ASSAYER CERTIFICATE NO. 6859 FLORES Date Signed 7/30/70 Arizona U. S. A.

CHARGES $ 118.75

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE August 3, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
1901								1.50
1902								3.20
1903								5.44
1904								2.70
1905								3.70
1906								6.84
1907								10.69
1908								4.85
1909								6.09
1910								2.55
1911								1.90
1912								1.80
1913								2.10
1914								5.29
1915								9.99
1916								7.24
1917								8.39
1918								6.24
1919								10.99
1920								2.75
1921								0.50
1922								0.50
1923								0.60
1924								5.49
1925								0.50

GEOEX
Cable: GEOEX

REC'D AUG 5 1970 REC'D

BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

REGISTERED ASSAYER
FLORIDA
Arizona U. S. A.

8/3/70

ASSAYER - CHEMIST

INVOICE # 5072

CHARGES $ 106.25

3226 East 46th Street

Phone 624-0049

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TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE August 3, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
1926								0.60
1927								0.70
1928								1.60
1929								1.10
1930								1.85

INVOICE # 5073

REGISTERED ASSAYER
CERTIFICATE NO. 8852
FLORES
Date Signed 8/3/70
Arizona U. S. A.

CHARGES $ 21.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc

DATE August 3, 1970

Date Submitted 7/23/70

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
2226							2.4
2227							2.8
2228							3.1
2229							2.2
2230							2.3
2231							2.2
2232							2.3
2233							1.1
2234							1.4
2235							1.3
2236							3.1
2237							3.0
2238							2.1
2239							2.6
2240							2.9
2241							2.3
2242							1.6
2243							1.6
2244							2.2
2245							3.2
2246							1.5
2247							1.8
2248							1.8
2249							1.9
2250							1.4

INVOICE # 5074

CHARGES $ 68.75

REGISTERED ASSAYER ... FLORIDA ... Arizona U. S. A. 8/3/70

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

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TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 3, 1970

Date Submitted 7/25/70

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
2301							1.8
2302							1.8
2303							1.8
2304							1.6
2305							2.0
2306							2.8
2307							2.7
2308							2.1

INVOICE # 5075

REGISTERED ASSAYER
CERTIFICATE NO.
1685
PETER S. FLORES
Date Issued
Arizona U. S. A.

8/3/70

CHARGES $ 22.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 7, 1970

Date Submitted 7/21/70

SAMPLE MARKED	GOLD OZ/TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
1931								0.40
1932								0.30
1933								0.75
1934								0.50
1935								0.25
1936								0.70
1937								0.60
1938								0.40
1939								0.30
1941								0.30
1942								0.75
1943								0.70
1944								0.55
1945								2.95
1946								0.60
1947								0.60
1948								9.94

HEINRICHS GEOEX

Cable: GEOEX

RECD AUG 11 1970 RECD

BOX 5064 TUCSON, ARIZONA 85703

Phone: (AREA 602) 623-0578

INVOICE # 5100

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date Signed 8/7/70 Arizona U. S. A.

CHARGES $ 72.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc. DATE Aug. 7, 1970

Date Submitted 7/21/70

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2201								1.45
2202								1.60
2203								1.00
2204								0.70
2205								3.35
2206								5.40
2207								5.84
2208								1.15
2209								0.55
2210								0.35
2211								0.40
2212								0.70
2213								0.35

HEINRICHS GEOEX

Cable: GEOEX

REC'D AUG 11 1970 REC'D

BOX 5084 TUCSON, ARIZONA 85703

Phone: (AREA 602) 623-0578

REGISTERED ASSAYER CERTIFICATE NO. 6852 PETE S. FLORES Date Signed 8/7/70 Arizona U. S. A.

INVOICE # 5100

CHARGES $ 55.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PRO.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 12, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2244								.30
2245								.30
2246								Trace
2247								Trace
2248								.02
2249								Trace
2250								Trace
2301								.50
2302								.20
2303								5.15
2304								Trace
2305								Trace
2306								.50
2307								Trace
2308								Trace
2434								Trace
2435								.20
2436								Trace
2437								.20
2438								Trace
2439								.20
2440								.25
2441								Trace
2442								2.60
2443								4.90

REGISTERED ASSAYER
CERTIFICATE NO.
6852
PETE S. FLORES
Date Issued 8/12/70
Arizona U. S. A.

INVOICE # 5118

CHARGES $ 106.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PRO.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 12, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2444								6.50
2445								3.50
2446								5.84
2447								5.90
2448								.30
2449								2.75
2450								.50

INVOICE # 5118

REGISTERED ASSAYER CERTIFICATE NO. 6852 STATE OF ARIZONA U. S. A. Date Signed 8/24/70

CHARGES $ 29.75

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJ.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 14, 1970

Submitted 7/23/70

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2214								1.08
2215								.73
2216								1.22
2217								.73
2218								1.81
2219								1.32
2220								.73
2221								.44
2222								.64
2223								2.30
2224								.88
2225								.64
2226								.54
2227								1.81
2228								.88
2229								4.46
2230								.49
2231								1.76
2232								.83
2233								.29
2234								1.22
2235								.93
2236								1.22
2237								.59
2238								1.22

HEINRICHS GEOEX
Cable: GEOEX
BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

REC'D AUG 18 1970 REC'D

INVOICE # 5133

CHARGES $ 106.25

REGISTERED ASSAYER
CERTIFICATE NO. 6852
PETE S. FLORES
Date Signed 8/14/1970
Arizona U. S. A.

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJ.

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 14, 1970

Submitted 7/23/70

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2239								1.42
2240								1.42
2241								1.37
2242								.59
2243								.54

HEINRICHS GEOEX
Cable: GEOEX

REC'D AUG 18 1970 REC'D

P.O. Box 5067 TUCSON, ARIZONA 85703

REGISTERED ASSAYER
CERTIFICATE NO.
6852
PETE S. FLORES
Date Signed 8/4/70
Arizona U. S. A.

INVOICE # 5133

CHARGES $ 21.25

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 21, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2309			0.02	Trench #8			2.50	9.79
2310			0.27				3.15	1.47
2311			0.10				2.85	8.27
2312			0.01				2.80	1.84

HEINRICHS
GEOEX
Cable: GEOEX

REC'D AUG 24 1970 REC'D

P.O.Y. 5084 TUCSON, ARIZONA 85703

Phone: (AREA 602) 623-9573

REGISTERED ASSAYER
CERTIFICATE
8852
STATE OF
FLORES
8/21/70

Invoice # 5171

CHARGES $ 36.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

A003P1-670 P3-03

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International

DATE July 25, 1970

SAMPLE MARKED	GOLD OZ./TON	SILVER OZ./TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2406							2.35	9.84
2407							1.95	10.54
2408							2.20	7.10
2409							2.40	1.75
2410							2.30	2.10
2411							2.35	1.60
2412							2.45	3.60
2413							2.05	1.35
2414							2.20	0.70
2415							2.20	0.50
2416							1.50	0.35
2417							1.15	0.40
2418							0.95	0.35
2419							1.35	0.35
2420							1.45	0.35
2421							2.55	0.45
2422							2.10	0.40
2423							2.60	0.40
2424							2.40	0.45
2425							1.80	0.35
2426							1.35	0.35
2427							1.40	0.65
2428							1.40	0.35
2429							2.15	0.40
2430							1.45	0.50

COPY

Entered in Assay Log

Entered in BAS

REGISTERED ASSAYER
CERTIFICATE NO. 6852
PETE FLORES
Arizona U.S.A.

CHARGES $ 175.00

ASSAYER-CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

A003P1-670 P3-03

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International

DATE July 25, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	Percent $CaCO_3$
2431							2.65	0.55
2432							1.70	0.35
2433							1.10	0.40

Entered in Assay Log

COPY

Entered in BAS

REGISTERED ASSAYER
FLORES
7/25/70
Arizona U. S. A.

CHARGES $ 21.00

ASSAYER-CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

NORTH STAR PROJECT

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 2, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
1944							2.5	
1945							2.3	
1946							2.1	
1947							4.2	
1948							2.9	

Entered in Assay Log

Entered on BAS rd

COPY

SXM

AUG 4 1970

RECEIVED

Pete S. Hour
8/2/70

INVOICE # 5068

CHARGES $ 13.75

ASSAYER - CHEMIST

3220 East 40th Street

AMERICAN ANALYTICAL [illegible]

NORTH STAR PROJECT

TUCSON, ARIZONA [illegible]

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Aug. 2, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ. / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
2201							3.9
2202							2.5
2203							2.1
2204							4.1
2205							2.5
2206							2.0
2207							2.1
2208							1.9
2209							2.1
2210							1.9
2211							2.0
2212							1.7
2213							1.4
2214							1.5
2215							1.3
2216							1.4
2217							1.8
2218							1.3
2219							1.4
2220							2.2
2221							1.4
2222							3.6
2223							3.0
2224							1.7
2225							2.6

Entered in assay log

Entered on B.A.S. [illegible]

COPY

AUG 4 1970

RECEIVED

[illegible] 8/2/70

INVOICE # 5068

CHARGES $ 68.75

ASSAYER CHEMIST

August 28, 1970

MEMO:

To: Don Cooley, Senior Geologist

From: James E. Sherman

Subject: Recommendations concerning Copper Spot claim group North Star Mine.

Geologic Summary

The Copper Spot claim group consists in general of granitic host rock that has been intruded by northwest trending monzonite, andesite and diabase dikes. The bedrock outcrops along a northwest trending ridge surrounded with alluvium sediments. A prominent massive quartz dike with associated silicification trending N48°W54°SW through the center of the ridge appear responsible for the presence of this topographic feature. This quartz vein varies up to thirty feet in thickness, is about 2000 feet long and appears to be injected along a fault zone. The fault brecciated zone in some locations is about twenty feet in thickness and shows considerable chloritic alteration. Some chrysocolla and possibly malachite are present along fractures within the fault zone adjacent to the quartz dike. Exposure of the structure and mineralization is observed in three trench type excavations along the fault structure.

Conclusions and Recommendations

The Copper Spot claim group shows one prominent structural feature that has been mineralized with some chrysocolla and malachite. However, it is believed that the presence of this copper mineralization by itself is of insufficient concentration to warrent further exploration of this claim group as a copper oxide deposit. It appears that the copper mineralization of the two areas (Copper Spot and Hart Land claims) which are some two miles apart may have a common source. Based on the results of geophysical data the Copper Spot claim group should be included or omitted from the new option.

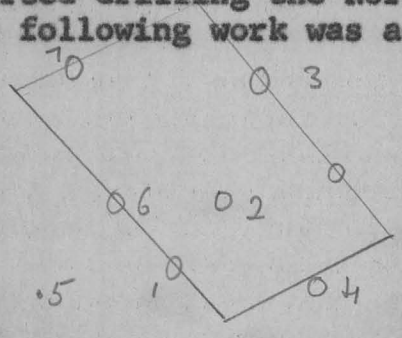
September 23, 1970

To: Don Cooley

From: Tom Griepentrog

Subject: North Star Progress Report, Week Ending 9-19-70

Started drilling the North Star on Monday. During the week the following work was accomplished:



Drill Hole Pattern

Hole # 1. Drilled #1 to 183', terminating at that point due to caving at the top of the hole. (Around our casing). The following mineralization was found: 20-35 trace of Cu. Ox: 75-80 Trace of Cu Ox: 127 to 140 ± 0.3% Cu Ox: Trace of Cu Ox. in remainder of hole - probably contamination from above. Water was encountered at 60'.

Hole # 2. Drilled #2 to 180', terminating at that point due to caving and slipping of casing. No Cu Ox. mineralization was seen in Hole #2. Water was encountered at 80'.

Hole # 3. Drilled #3 to 200'. No Cu Ox. mineralization was seen. Water at 160'

Cont'd.....

Hole # 4. Drilled #4 to 200'. The following mineralization was seen: 20-25 trace of Cu Ox: 115-135 trace of Cu Ox. Water at 100'.

Hole # 5. Drilled #5 to 150', terminating at that point due to excessive time and bit consumption. The following mineralization was seen: ± 0.5 to 1.0% Cu Ox. from 39-45': 45-50 trace of Cu Ox: trace of Cu Ox. through remainder of hole - may have been contamination sluffing below casing. Water at 55'.

Hole # 6. Rotary drilled to 25', cored to 35 - will continue Monday. No mineralization seen. Extremely broken ground - very poor core recovery (± 25%).

Note: Property doesn't seem to have it as an oxide ore body. If drilling is continued, I plan to drill #7 as indicated on sketch.

Tom Griepentrog

TG/re:

August 24, 1970

MEMO:

To: Don Cooley, Senior Geologist

Subject: Status Report of Essex North Star Evaluation Project. Job # 557

Object: To establish the economic evaluation and feasibility of developing a leach copper prospect at the North Star Mine.

The first jobs to be completed at the North Star mine was the location of eight section and quarter section corners and five control points for black and white aerial photographs that were later taken of the property. Seven trenches in the Hart Land claim group were sampled in both the vertical and horizontal orientation. Samples were taken generally at five foot increments and assayed for copper, iron and calcium carbonate. The trenches were mapped in plan and cross section for later reference and correlation with assay values.

Five barrels of broken rock were gathered from several locations adjacent to the trenches. These bulk samples were delivered to Tucson for metallurgical tests.

The trenches and cross panelling points were surveyed by stadia methods to establish their vertical and horizontal control. Later a trench No. 8 located some 500 feet southwest of the Randell House was excavated, surveyed and sampled.

Based on geologic structure and mineralization occurrence in the Hart Land claim group, a pattern of seven drill holes was located on the ground as a minimum drilling recommendation for further evaluation of the property.

A formal presentation of data pertaining to the North Star mine was presented at a meeting of ESSEX and GEOEX officials. Recommendations for six rotary drill holes and one core hole to a minimum depth of 200 feet per hole was accepted as the next phase of evaluation for the central portion of the North Star property. Other considerations that must be decided upon before a forthcoming option due date were discussed. It will be necessary to determine the economic potential of the Copper Spot claim group located about two miles northeast of the Hart Land claims. Before the time of the option due date a decision must be reached to include or not include the Copper Spot claims in the

new exploration option. The geologic possibilities for deep copper sulfide deposits on the North Star property must be considered. An I.P. proposal for the property is immediately necessary for consideration. It would be most advantageous to have I.P. field work, interpretation and recommendations available for consideration prior to the option due date. This due date is believed to be about Jan. 1, 1971. Also mentioned during the conference is the need to acquire all worthwhile geophysical data concerning the North Star property.

Preparation prior to rotary drilling is underway. Drilling should start on or about September 1, 1970.

James E. Sherman
Geologist

JES/re:

Assay Log
Hole # 1
Rotary bit
Total Depth 180'

North Star Project
A 003 P1-670
GEOEX Job # 557
14 and 15 September 1970

Depth	%Cu.
0 - 5'	0.03
5 -10'	0.13
10 -15'	0.03
15 -20'	0.04
20 -25'	0.08
25 -30'	0.24
30 -35'	0.04
35 -40'	0.03
40 -45'	0.02
45 -50'	0.41
50 -55'	0.08
55 -60'	0.02
60 -65'	0.01
65 -70'	0.02
70 -75'	Trace
75 -80'	0.10
80 -85'	0.22
85 -90'	0.10
90 -95'	0.05
95 -100'	0.06
100 -105'	0.11
105 -110'	0.09
110 -115'	0.10
115 -120'	0.19
120 -125'	0.07
125 -130'	0.08
130 -135'	0.22
135 -140'	0.11
140 -145'	0.22
145 -150'	0.22
150 -155'	0.11
155 -160'	0.08
160 -165'	0.04
165 -170'	0.06
170 -175'	0.07
175 -180'	0.03

Assay Log
Hole # 2
Rotary bit
Total Depth 180'

North Star Project
A 003 P1-670
GEOEX Job # 557
15 September 1970

Depth	%Cu.
0 - 20'	0.13
20- 40'	0.06
40- 60'	0.03
60- 80'	0.02
80-100'	0.03
100-120'	0.03
120-140'	0.02
140-160'	0.01
160-180'	0.06

Assay Log
Hole # 3
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
15 and 16 September 1970

Depth	%Cu.
0 - 20'	0.02
20- 40'	0.01
40- 60'	0.02
60- 80'	0.02
80-100'	0.03
100-120'	0.01
120-140'	0.01
140-160'	0.01
160-180'	0.01
180-200'	0.01

Assay Log
Hole # 4
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
September 16 1970

Depth	%Cu.
0 - 5'	0.05
5 - 10'	0.17
10--15'	0.18
15- 20'	0.05
20- 25'	0.03
25- 30'	0.03
30- 35'	0.03
35- 40'	0.02
40- 45'	0.06
45- 50'	0.04
50- 55'	0.02
55- 60'	0.02
60- 65'	0.03
65- 70'	0.05
70- 75'	0.08
75- 80'	0.05
80- 85'	0.02
85- 90'	0.03
90- 95'	0.04
95-100'	0.05
100-105'	0.05
105-110'	0.04
110-115'	0.03
115-120'	0.07
120-125'	0.03
125-130'	0.08
130-135'	0.22
135-140'	0.21
140-145'	0.06
145-150'	0.03
150-155'	0.04
155-160'	0.05
160-165'	0.06
165-170'	0.06
170-175'	0.03
175-180'	0.08
180-185'	0.05
185-190'	0.06
190-195'	0.02
195-200'	0.04

Assay Log
Hole # 5
Rotary bit (Core 0 -35.5' - 10% recovery)
Total Depth 150'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
17 September and 20 September 1970

Depth	%Cu.
0 - 5'	0.02
5 -10'	0.02
10 -15'	0.01
15 -20'	0.04
20 -25'	0.01
25 -30'	0.01
30 -35'	Trace
35 -40'	0.70
40 -45'	2.51
45 -50'	0.07
50 -55'	0.04
55 -60'	0.05
60 -65'	0.03
65 -70'	0.01
70 -75'	0.03
75 -80'	0.01
80 -85'	0.02
85 -90'	Trace
90 -95'	0.01
95-100'	0.03
100-105'	0.01
105-110'	0.02
110-115'	0.04
115-120'	0.01
120-125'	0.04
125-130'	0.02
130-135'	0.01
135-140'	0.01
140-145'	0.05
145-150'	0.02

Assay Log
Hole # 6
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
18 September 1970

Depth	%Cu.
0 - 5'	0.14
5 -10'	0.02
10-15'	0.05
15-20'	0.04
20-25'	0.03
25-33'	0.01
33½'	0.02
33½-35'	0.02
35 -36'	0.01
36 -39'	0.02
39 -42'	0.01
42 -46'	0.06
46 -51'	0.06
51 -55'	0.03
55 -60'	0.06
60 -65'	0.02
65 -70'	0.02
70 -75'	0.01
75 -78'	0.01
78 -82'	Trace
82 -85'	0.02
85 -90'	0.01
90 -95'	0.01
95 -100'	0.07
100 -105'	0.02
105 -110'	0.02
110 -115'	0.02
110 -115'	0.04
115 -120'	0.10
120 -125'	0.03
125 -130'	0.04
130 -135'	0.03
135 -140'	0.01
140 -145'	0.01
145 -150'	0.02
150 -155'	0.01
155 -160'	0.02
160 -165'	0.01
165 -170'	0.01
170 -175'	0.07
175 -180'	0.03
180 -185'	0.02
185 -190'	0.02
190 -195'	0.03
195 -200'	0.02

Assay Log
Hole # 7
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
23 September 1970

Depth	%Cu.
0 - 5'	0.02
5 -10'	0.02
10-15'	0.02
15-20'	0.03
20-25'	0.09
25-30'	0.03
30-35'	0.40
35-40'	0.09
40-45'	0.03
45-50'	0.03
50-55'	0.07
55-60'	0.05
60-65'	0.14
65-70'	0.02
70-75'	0.02
75-80'	0.01
80-85'	0.01
85-90'	0.03
90-95'	0.09
95-100'	0.06
100-105'	0.06
105-110'	0.10
110-115'	0.07
115-120'	0.10
120-125'	0.09
125-130'	0.11
135-140'	0.05
140-145'	0.12
145-150'	0.22
150-155'	0.07
155-160'	0.05
160-165'	0.03
165-170'	0.04
170-175'	0.16
175-180'	0.05
180-185'	0.08
185-190'	0.09
190-195'	0.10
195-200'	0.04

ROTARY DRILLING PROGRAM

NORTH STAR PROPERTY

Project A 003 P1 670

Pinal County

FOR

ESSEX INTERNATIONAL INC.

Tucson, Arizona

September 1970

BY

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5964 TUCSON, ARIZONA 85703
TEL: 623-0578 AREA CODE 602

GEOEX JOB # 557

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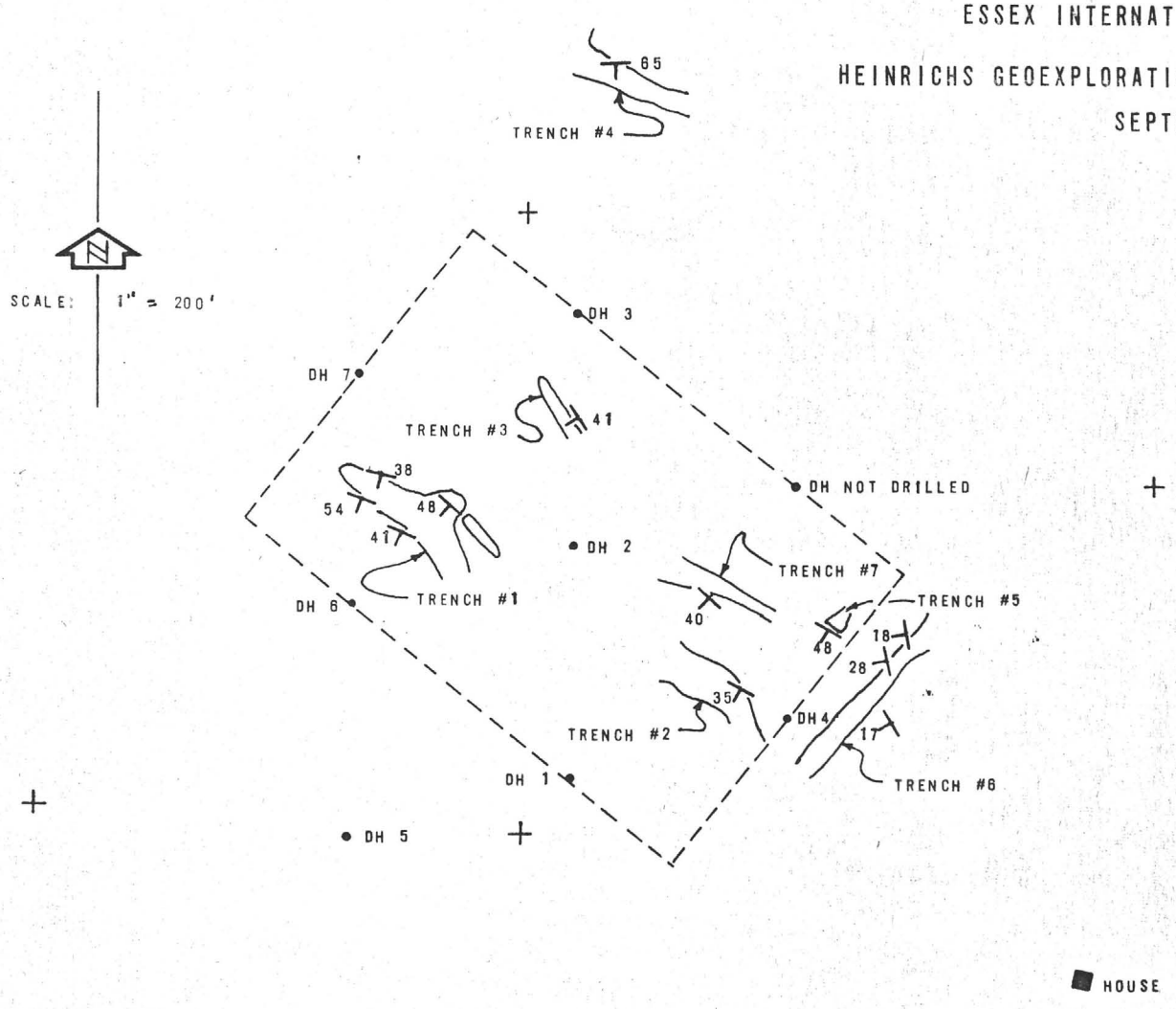
Drill Hole Plan Pattern	
Geologic Appraisal	1
Assay Logs	

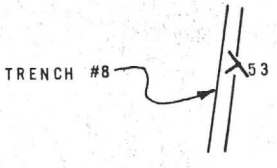
TRENCH & DRILL HOLE LOCATION PLAN
of
NORTH STAR PROPERTY
for
ESSEX INTERNATIONAL INC.
by
HEINRICHS GEOEXPLORATION COMPANY
SEPTEMBER 1970



+ PANEL FOR AERIAL PHOTOS CONTROL

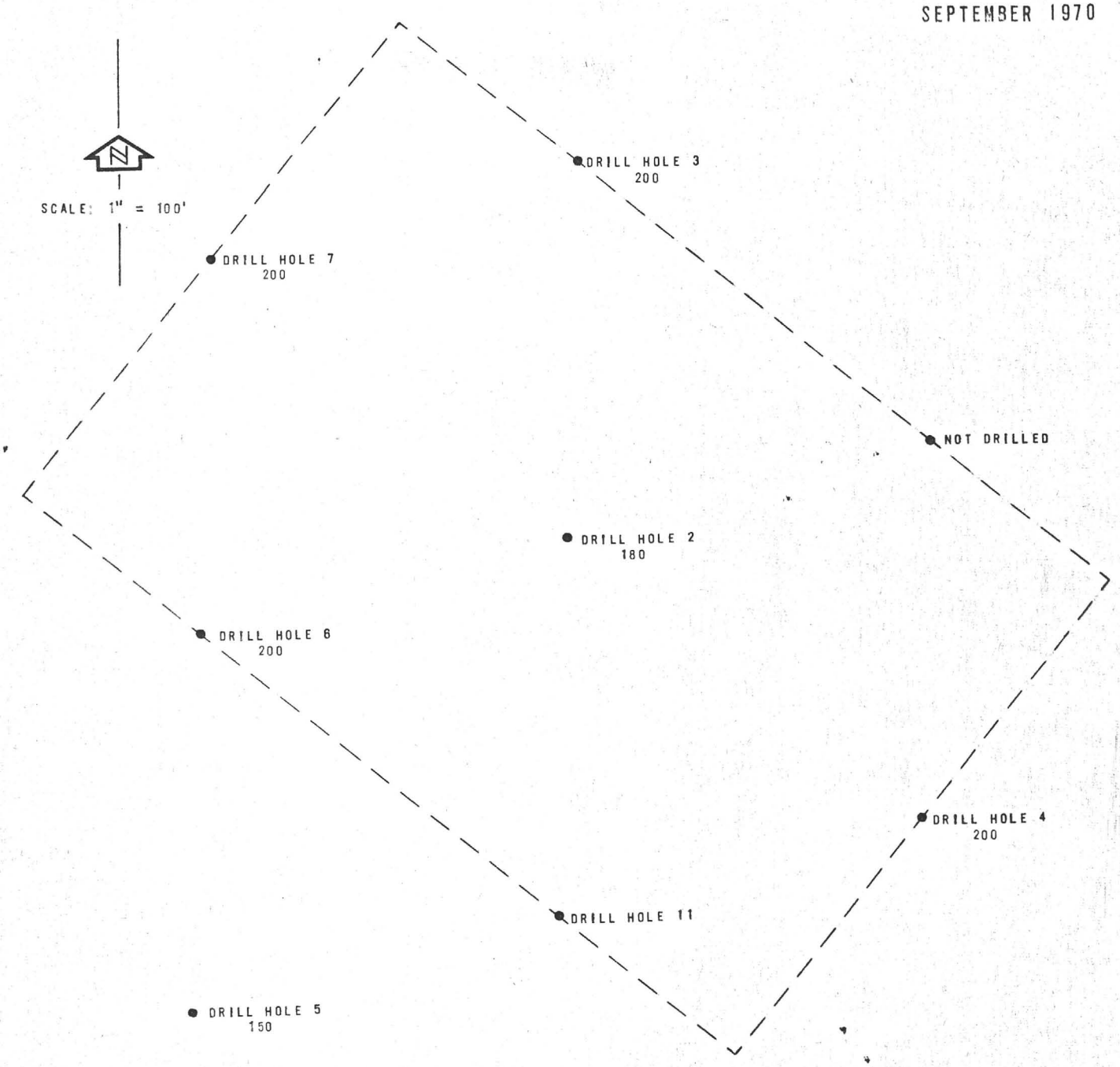
● ROTARY DRILL HOLE

T 54 DIP & STRIKE – "VEINS"



HEINRICHS GEOEX

ROTARY DRILLING PATTERN PLAN
of
NORTH STAR PROPERTY
for
ESSEX INTERNATIONAL INC.
by
HEINRICHS GEOEXPLORATION COMPANY
SEPTEMBER 1970



HEINRICHS GEOEX

Heinrichs GEOEXploration Company, at the request of ESSEX International Inc., supervised the shallow drilling program to test the near surface copper oxide potential on part of the North Star property between 10 September and 23 September 1970. The field operations were supervised by Tom Griepentrog under the direction of various senior members of the GEOEX staff. The drilling was done by Loman Exploration Company Inc. of Moab, Utah. All holes were drilled with a rotary bit except for 35.5 feet of core from hole number 5. Coring was slow and recovery poor due to the highly fractured rock which required continuous reentry and reaming.

The sampling techniques were very good. Several instances of a high copper value showed up in a five foot sample increment but dropped back to normal background in the next lower increment with very little if any dilution. The sampling results are quite satisfactory in all respects.

The rock is nearly all granitic, very broken and somewhat weathered. Mineralization was extremely localized and confined to specific fracture zones. The cuttings frequently revealed slickensided features and fault gauge indicating an en echelon fracture system. However, only certain fractures in this system were mineralized. The larger mineralized zones (evidenced in existing trenches) showed a halo of alteration, but such alteration was of limited extent. The major mineralized fractures were also

fairly continuous proving that the en echelon pattern was not broken or offset by transverse faults.

The fact that not all fractures are mineralized and alteration patterns are not extensive indicates that the injection of ore bearing hydrothermal fluids occurred over a short time period and that much of the fracturing was post mineralization. There does seem to be a definite association of the mineralized zones with a quartz monzonite-Precambrian granite contact. Perhaps the injection of mineralized fluids occurred during the final stage of this intrusive activity. Unfortunately, the abundance and variety of intrusives in the area makes surface tracing of this contact zone impossible at this time and stage of exploration.

It is interesting to note that some of the mineralized fractures are strongly mineralized. The primary sulfide minerals chalcopyrite and bornite were seen and small quantities of very rich copper ore have been shipped from the property. It is possible that these rich zones extend down-dip. An Induced Polarization survey, oriented with parallel lines normal to the strike of the dominant fracture pattern, should detect any accumulation of such sulfides at depth.

Respectfully submitted,
HEINRICHS GEOEXPLORATION COMPANY

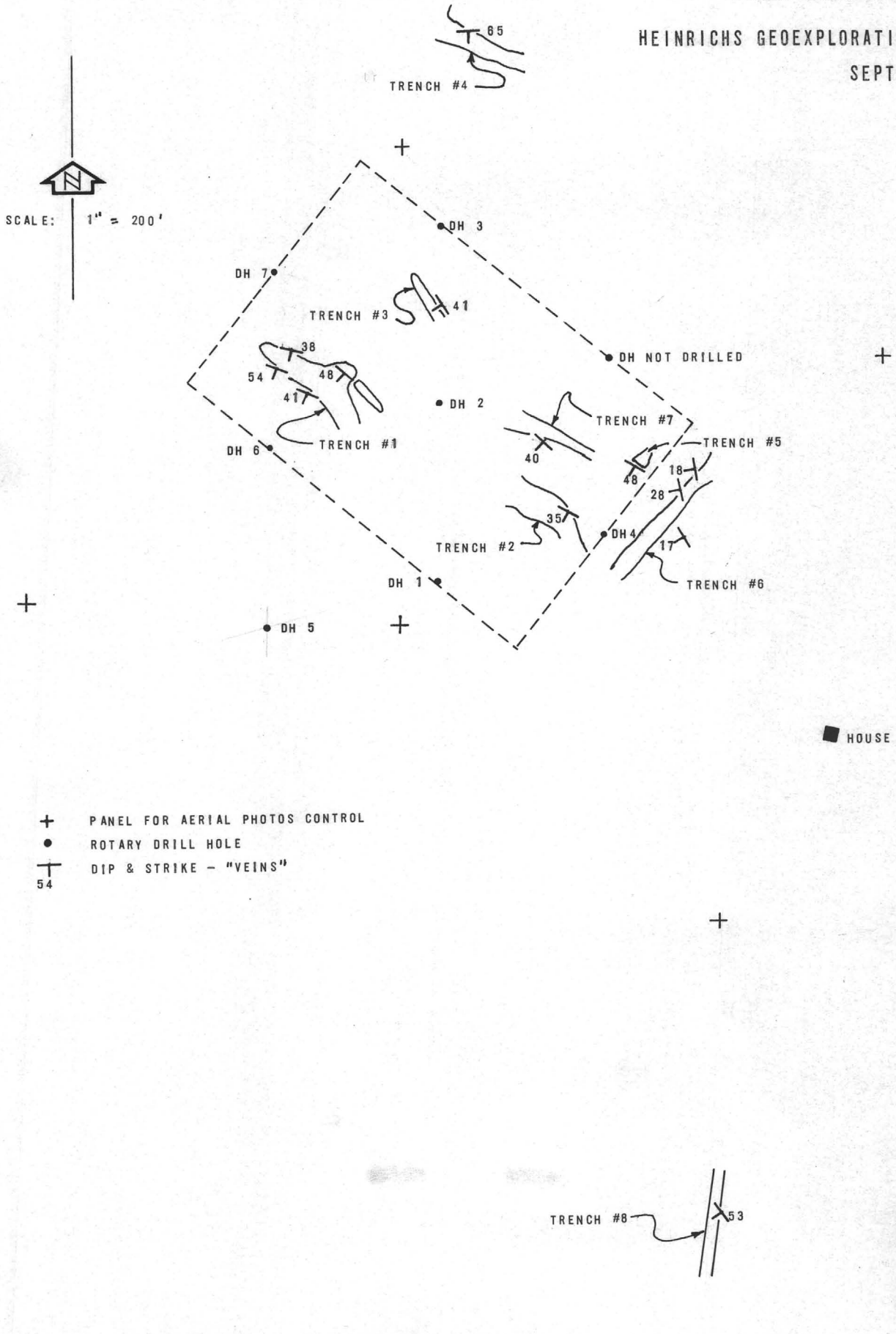
Thomas E. Griepentrog
Project Geologist

APPROVED: Donald B. Cooley
Sr. Geologist

P.O. Box 5964
Tucson, Arizona
October 1970

GEOEX Job # 557

TRENCH & DRILL HOLE LOCATION PLAN
of
NORTH STAR PROPERTY
for
ESSEX INTERNATIONAL INC.
by
HEINRICHS GEOEXPLORATION COMPANY
SEPTEMBER 1970



ROTARY DRILLING PATTERN PLAN
of
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ESSEX INTERNATIONAL INC.
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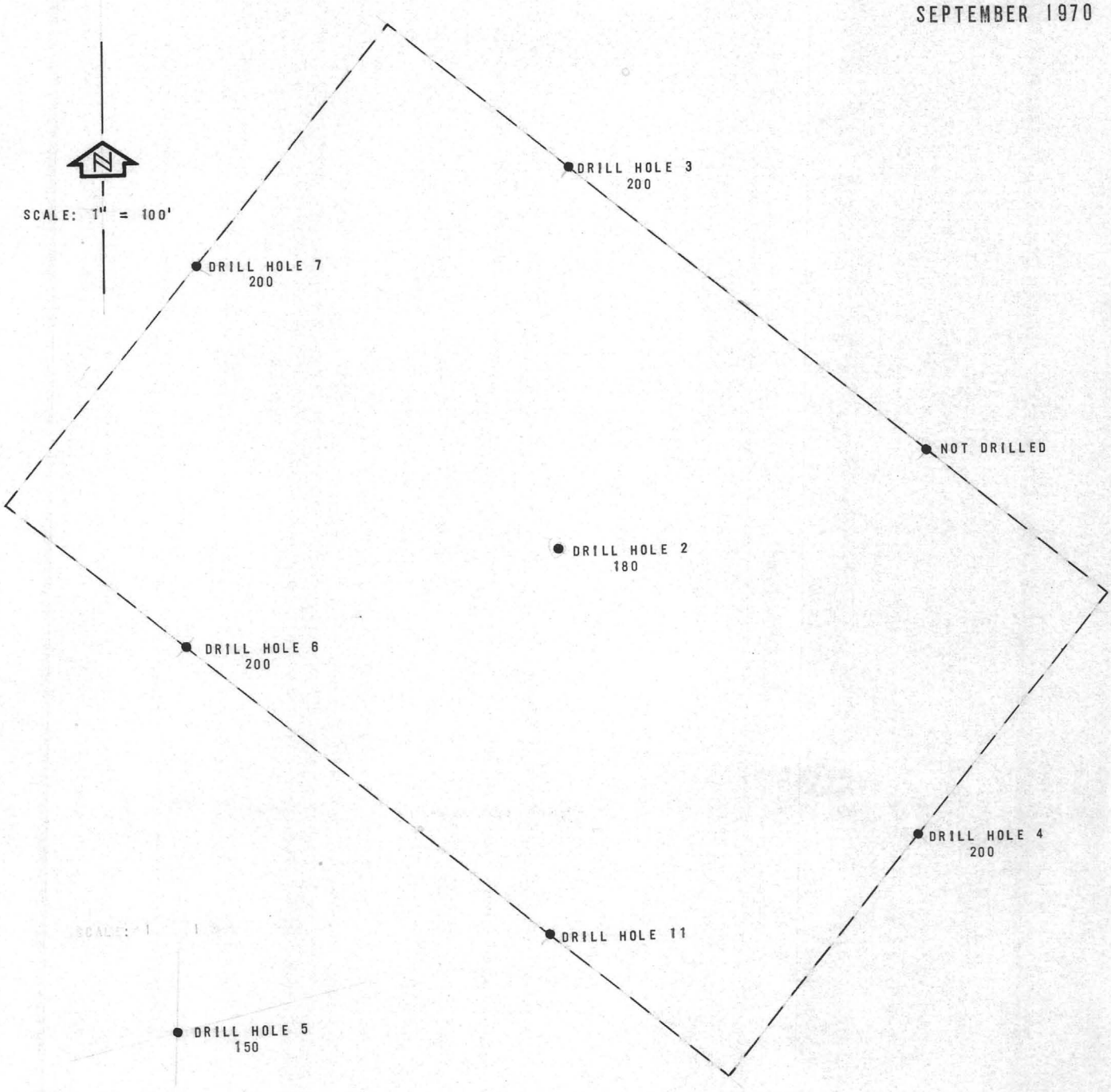
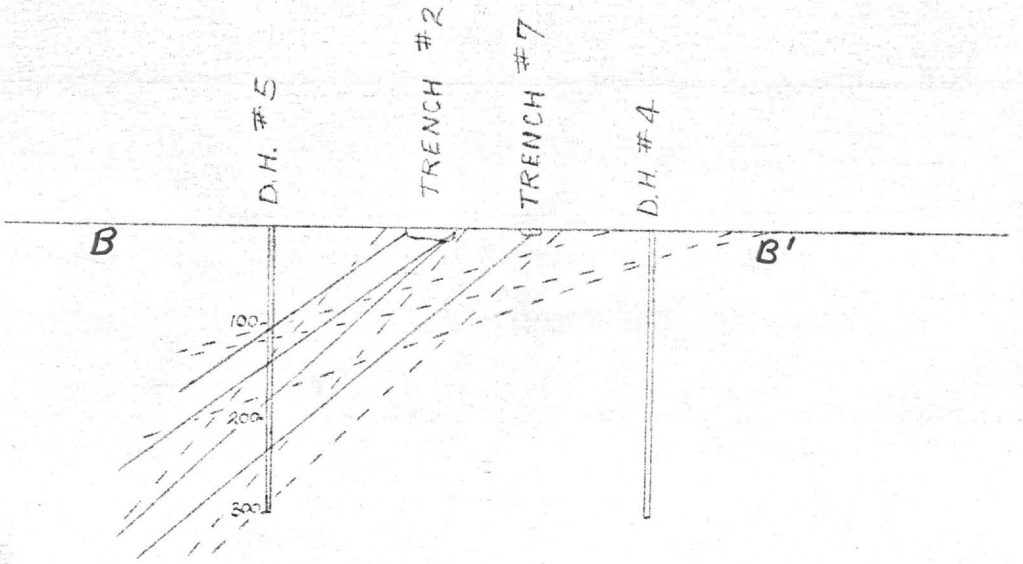
SEPTEMBER 1970



HEINRICHS GEOEX

NORTH STAR MINE



CROSS SECTION LOOKING N.W.
THROUGH D.H.'s #4 & 5 AND THROUGH
TRENCHES #2 & 7.

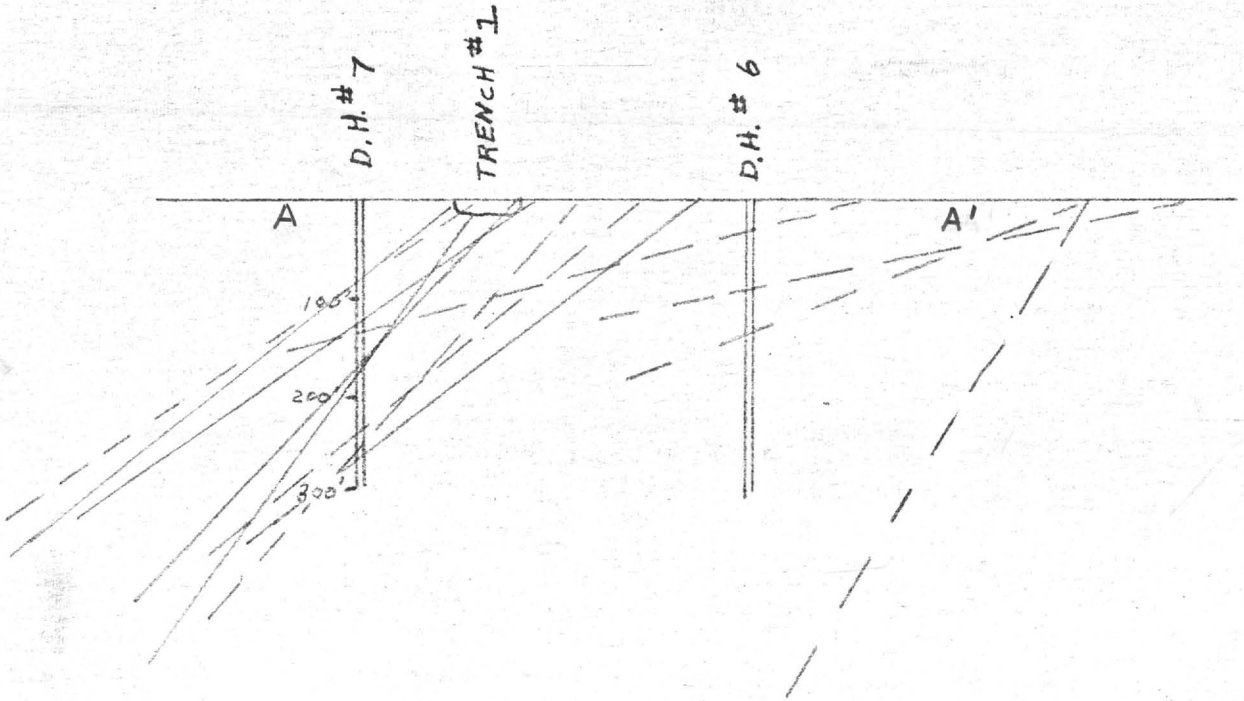
——— SIGHTED STRUCTURES

- - - - PROJECTED STRUCTURES

SCALE (FT) 0 100 200 300

PRELIMINARY

NORTH STAR MINE



CROSS SECTION LOOKING N.W.
THROUGH D.H.'s #6 & 7 AND THROUGH
TRENCH #1

——— SIGHTED STRUCTURES
- - - - PROJECTED STRUCTURES
SCALE (FT) 0 100 200 300

PRELIMINARY

Large low grade silver deposits in

breccia has been leached of some of its

HEINRICHS
GEOEXPLORATION CO.
Box 5964 Tucson, Arizona 85703
Phone: (602) 623-0578
Cable: GEOEX

N. America

By **Barry N. Watson**
Southwest Regional Exploration Manager, U.S. Borax and Chemical Corporation, Tucson, Arizona, United States*

Criteria and comparisons of nine selected low grade

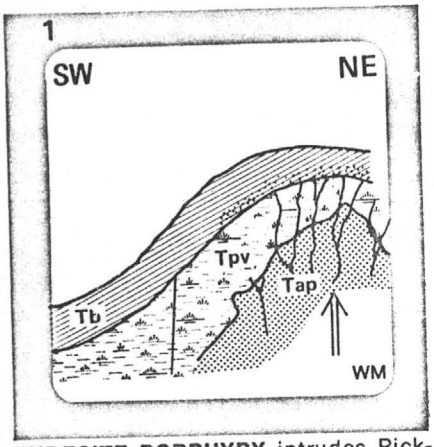
Deposit	Host Rock	ORE MINERALOGY: Silver-Bearing Minerals	ORE MINERALOGY: Other Minerals	Ore Mineral Mode of Occurrence	GRADE: Hypogene+ Supergene	GRADE: Supergene	Ore Tonnage	Shape of Deposit	Size of Deposit (Feet)
CANDELARIA, NEVADA	Triassic-Jurassic Candelaria Fm., tuffaceous shales	Secondary silver in limonite and jarosite, some remnant sulphides	Native gold, jamesonite, pyrite, minor chalcopyrite and galena	Disseminated, and in veins parallel to bedding	±3 oz. Ag	Predominant	10-20 million	Tabular	2000 x 500 with fault repeats
DELAMAR, IDAHO	Miocene rhyolite quartz porphyry (ash flow tuff)	Principally naumannite (silver selenide), also argentite	Minor pyrite, free gold	Finely disseminated in quartz	Est. 2-6 oz. Ag, ±0.03 oz. Au	—	Est. >8 million	Various shapes from equidimensional blob to long-&-narrow	Range from 100 ft. min. widths to 4000 ft. max. lengths
HARDSHELL, ARIZONA	Mesozoic volcanic and volcaniclastic rocks	Native silver? Argentian cryptomelane, cerargyrite, pearceite, argentojarosite	Pyrite, traces galena	Disseminated in associated Mn oxides and silica	Est. 4-5 oz. Ag	—	Est. >5 million	Manto-like	1600 x 600
HOG HEAVEN, MONTANA	Two mid-Tertiary horizons, latite tuff breccia and volc. conglomerate	Galena, enargite, matildite	Pyrite, sphalerite, barite	Disseminated	Not established	—	Not established	Strongly warped, lensoid	Not established
LANGTRY, CALIFORNIA	Miocene Barstow Fm., lakebed sediments, reworked volcanic ash	Native silver?	Barite, pyrite	Finely disseminated	Est. ±2 oz. Ag	—	±15 million	Flat-lying	±700 x 2000 x ±100 thick
REAL DE ANGELES, ZACATECAS, MEXICO	Upper Cretaceous sandstone and siltstone, slightly limey	Argentiferous galena and minor tetrahedrite	Sphalerite, galena, pyrite, arsenopyrite, minor chalcopyrite	Partly disseminated, partly fracture-filling, some veins	2½ oz. Ag 1% Pb, 1% Zn	Slight silver enrichment in shallow supergene	±50 million	Roughly circular	At least 1000x 1000
ROUND MOUNTAIN, COLORADO	Oligocene rhyolite flows and breccias	Argentian cryptomelane, bromides and chlorides, native silver	Barite, fluorite, iron oxides	Mn oxide veins and veinlets in stockworks	Remnant only	2-3 oz. Ag	5-12 million	Flat-lying, lensoid	2½ million square feet
SAM GOOSLY, BRITISH COLUMBIA	Jurassic Hazelton Group, andesitic tuffs and breccias	Tetrahedrite, traces of ruby silver and argentite	Pyrite, chalcopyrite, pyrrhotite, sphalerite, rare galena	Disseminated and veinlet, some massive	Hypogene only. 2.8 oz. Ag, 0.33% Cu, 0.02 oz. Au	None	43½ million open pit with depth extension	Essentially tabular	4000 x 300, irregular
WATERLOO, CALIFORNIA	Miocene Barstow Fm., lakebed sediments, reworked volcanic ash	Native silver? Argentiferous pyrite? Also cerargyrite, embolite, argentojarosite	Barite, pyrite	Finely disseminated	Est. 2-3 oz. Ag	—	Est. >25 million	Elongate wedge	1000 x 6000

1. "Estimates" are those of the author.

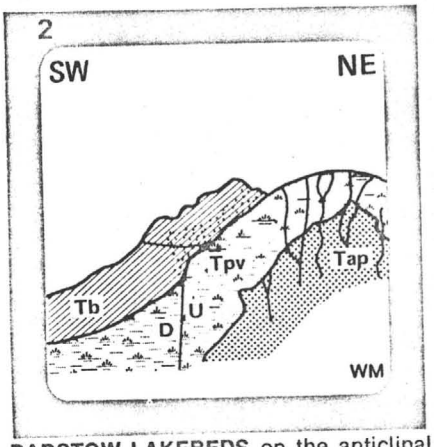
bulk tonnage silver deposits in western North America[1]

Structural Controls	Open Pit	Stripping Ratio	Age of Deposit	Dominant Alteration Minerals	Supergene Enrichment	Depth Extent of Partial Oxidation	SPATIALLY ASSOCIATED INTRUSION: Rock Type	SPATIALLY ASSOCIATED INTRUSION: Size	Genetic Association	Metallurgical Characteristics of Ore	Additional Comments
Primary not known, secondary by fault offsets	Yes	Approx. 3:1	Jurassic or Tertiary	Clay, dolomite (magnesium metasomatism) manganese oxides	No (dispersion)	600' on dip, 450' vertically	Quartz monzonite, felsite dikes	70' - 180' wide, 400' long	Not known	Refractory—under investigation	May be syngenetic (Jurassic) or replacement (Tertiary)
Possibly deep-seated control, combined with more brittle quartz porphyries	3 pit areas	2:1 to 6:1	Miocene	Silica	Possible but minor	—	Various acid to intermediate volc. rocks, vents	Various	Probable	Nicely amenable to cyanidation. Not refractory (low Fe, Mn)	Deposit is in a volcanic center
Deep-seated structures, favorable porosity and permeability	Possible open pit, possible underground	If open pit, depends on cutoff grade	Laramide?	Silica, clay, Mn oxides (5-25% Mn)	Minor	At least 500'	Andesite and quartz latite	Irregular dikes and sills	None	Refractory	Underlying Paleozoic carbonate rocks provide the solution channels
Syn- & post-mineral folding	Possibly and partially	Not known	Mid-Tertiary	Silica with macroscale clay envelopes	In upper breccia horizon	To 500'	None known	—	—	Not known	Being explored
Deep-seated structures, favorable porosity and permeability	Yes	3:1	Miocene or Pliocene	Silica, iron oxides, clay, manganese oxides	None noted	Entire deposit	Pre-ore granitic body	Several square miles	None with granitic body	Refractory	Author considers this deposit an extension of the Waterloo (see below)
Bedding, fracturing	Yes	Low	Not known	None in classic sense. Minor calcite, chlorite	Locally at least silver	Up to 125'	None	—	—	Amenable to flotation	Both syngenetic-diagenetic (Cretaceous) and classic hydrothermal origins have been suggested
Primary not known, secondary by fossil water tables	Yes	Approx. 2:1	Mid-Tertiary still forming(?)	Clay, silica (opal-type), sericite	Redeposition, possible enrichment	200'	Not known	—	—	Refractory—under investigation	Primary grade not known. Deposit is in a volcanic center
Possibly position in a theorized volcanic vent	Yes, with depth extension	2.1:1	Eocene or Jurassic	Sericite, clay, chlorite, silica, tourmaline, gypsum, aluminous (scorzalite, andalusite, pyrophyllite, corundum)	None or very minor	Very shallow (glaciated)	Syenomonzonite-alkali gabbro stock	Over a mile square	Not certain but quite possible	Flotation recovery, requires fine grinding	Deposit may be contact or replacement associated with an Eocene stock in a volcanic vent, or syngenetic (Jurassic) remobilized
Deep-seated structures, favorable porosity and permeability	Yes	Relatively low	Miocene or Pliocene	Silica, calcite, clay, manganese oxides	Locally in structures	At least 400'	Andesite porphyry	Modest-sized elongate stock	Probable	Refractory	Post-mineral brecciation caused by gravity gliding

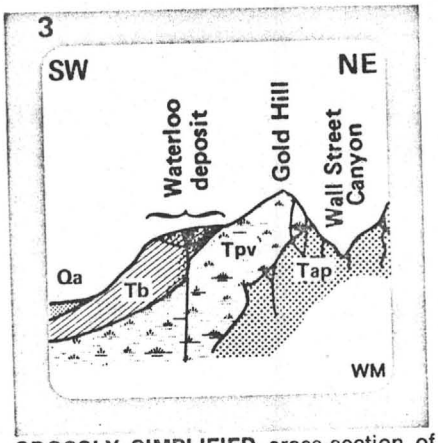
DIAGRAMMATIC INTERPRETATION OF THE HISTORY OF THE WATERLOO DEPOSIT



ANDESITE PORPHYRY intrudes Pick-handle volcanics and overlying Barstow lakebeds, doming these rocks along a NW-trending axis. Subsequent silver mineralization cuts competent igneous rocks as veins, but disseminates under lower temperature, pressure, as moist and permeable lakebeds are encountered.



BARSTOW LAKEBEDS on the anticlinal rise—now laden with silica, silver, barite—slide down the southwest flank of the anticline, triggered by the range-front (Calico) fault and under the influence of gravity. Deformation of unmineralized lakebeds is by folding of mineralized lakebeds by shattering and brecciation.



GROSSLY SIMPLIFIED cross-section of present topography. More recent movement of the Calico fault (including late strike-slip) has reflected upward as several strands through the mineralized breccia. The effects of probable southwestward tilting of the Calico Mountains block are not shown.

Continued from page 45

must by amenable to bulk mining methods; 2. Silver must be the most valuable extractable metal or mineral, based on present-day prices; and 3. Deposit data must be available. The latter point may seem all too obvious, but unavailability of company data for various reasons has forced the exclusion of two important bulk-tonnage silver deposits of the Waterloo-type—at Creede, Colorado and Rochester, Nevada—from the chart. Each will be briefly noted in the following comments.

Silver mineralization at Delamar in southwestern Idaho, Round Mountain in southcentral Colorado, and Creede in southwestern Colorado is located within known caldera structures.

At Delamar naumannite (Ag_2Se) is the principal ore mineral and is found disseminated through quartz veins and silicified rhyolitic ash-flow tuff of Miocene age. The mineralizaiton is relatively iron- and manganese-free and is nicely amenable to cyanidation. Three pits are planned, and the shape, size, stripping ratio, and silver and gold contents of the ore bodies vary from pit to pit. Gold is found free here and is more important as a byproduct than at any of the other deposits. A dual syngenetic-epigenetic hot spring environment has been proposed for the Delamar mineralization, while deeper-seated, more classically epithermal mineralization is known elsewhere in the district.

The Round Mountain deposit is north of Silver Cliff, Colorado and is found in rhyolitic flows and breccias of Oligocene age. The silver mineralization is entirely secondary and principally tied up with manganese oxides, unfortunately giving rise to a refractory ore. As nothing remains that can definitely be identified as primary mineralization, it is not known whether enrichment has occurred. A horizon of black volcanic glass immediately beneath the ore-bearing flows and breccias has acted as a dam to descending silver-bearing meteoric solutions and has, thus, been instrumental in creating the presently-known deposit. Very low-grade silver values are said to exist throughout much of the volcanic materials underlying the black glass horizon. Ore genesis is doubtlessly related to the volcanic activity, but erosion has stripped off any evidence that would prove or disprove a surface or very-near surface hot spring environment.

Creede, Hardshell, Hog Heaven

At Creede, Colorado, exploration programs are presently underway to delineate silver-bearing tonnages in the upper Oligocene Creede formation. This thick sequence of tuff, stream and lake sediments, and travertine was deposited following resurgence of the Creede caldera and coincided, in part, with eruptions of quartz latite flows. The mineralization in the Creede formation is reported to be epithermal. Similarities between the Creede and Waterloo deposits may prove striking.

The Hardshell, Arizona and Hog Heaven, Montana deposits lie in sequences of volcanic and volcaniclastic rocks overlying older shelf sediments and metasediments.

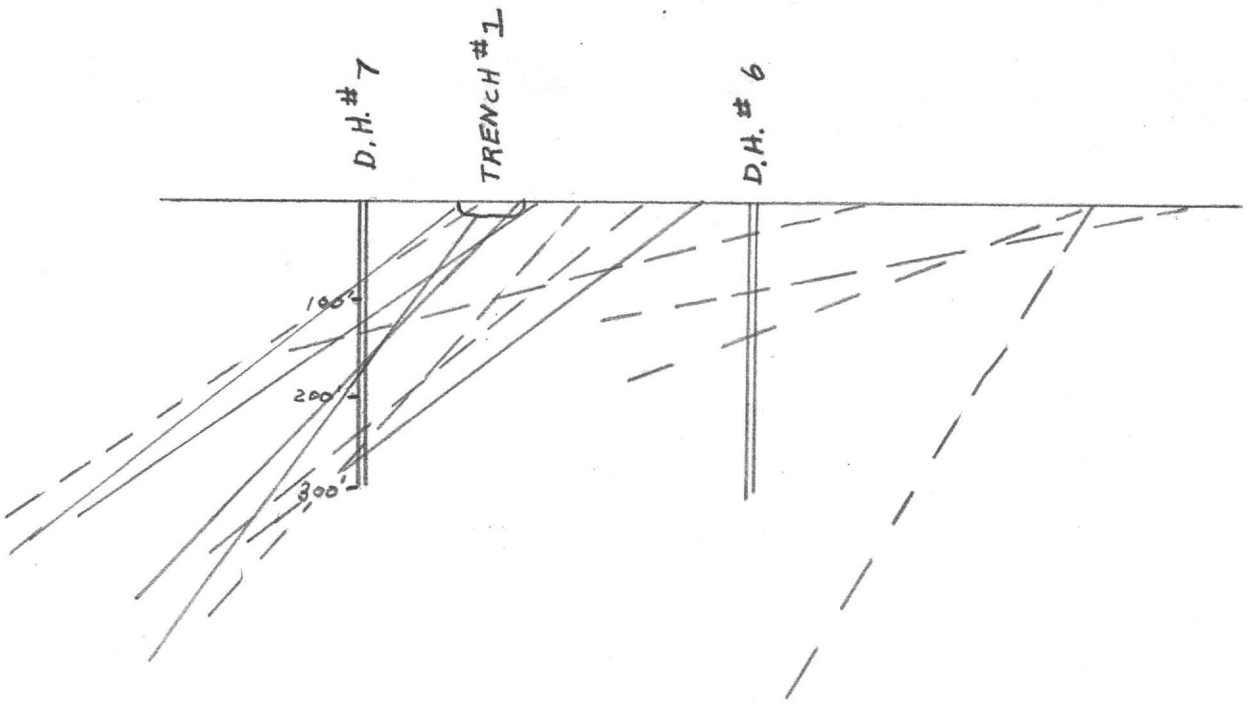
The Hardshell deposit is on the eastern side of the Patagonia Mountains and occurs in Mesozoic volcanic and volcaniclastic rocks once known as the "Chief Conglomerate." The finely disseminated silver is found in associated manganese oxides and silica, and the ore is quite refractory. This manto-like mineralization may be Laramide in age, and solution channels for the mineralization to reach the "Conglomerate" are known to exist in the underlying upper Paleozoic carbonate sediments. Fluid inclusion and other technical data soon to be released are said to indicate a depth of burial of over a mile at the time of formation of the deposit.

The Hog Heaven silver mineralization southwest of Kalispell, Montana has been mined by open pit methods in the past and is currently undergoing an exploration program aimed at developing bulk-tonnage reserves. Galena, enargite, and matildite (a silver-bismuth sulphide, $AgBiS_2$) carry silver disseminated through both an upper latite tuff breccia unit and a separate lower volcanic conglomerate unit in a mid-Tertiary volcanic sequence. These stratified volcanic materials lie upon lower Belt preCambrian metasediments. Again, silica is the dominant alteration mineral, with macroscale clay envelopes, and some enrichment of silver has occurred in the upper breccia horizon. A surface and near-surface hot spring environment of deposition has been proposed.

Sam Goosly and Rochester

Both the Sam Goosly, British Col-

NORTH STAR MINE



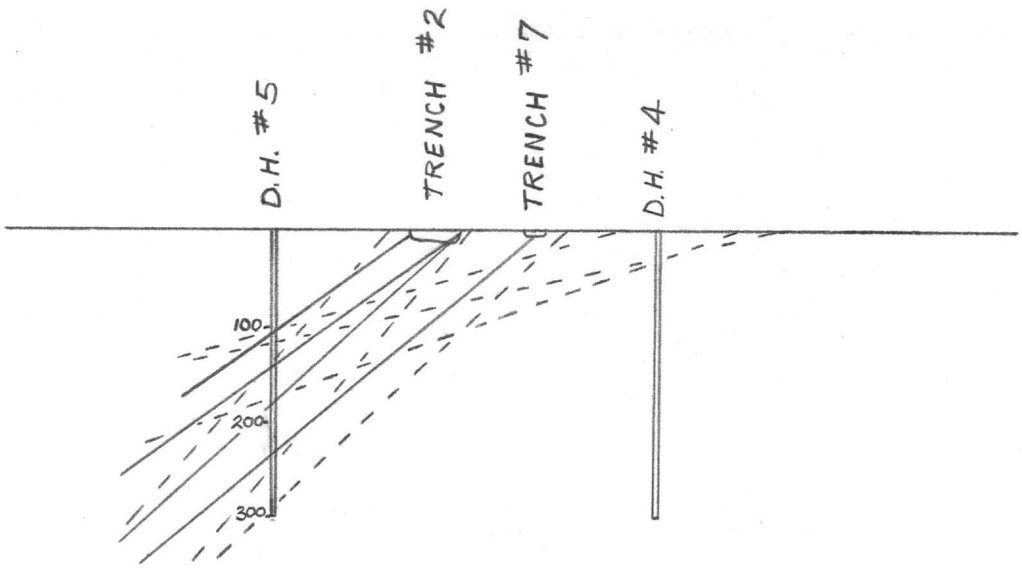
CROSS SECTION LOOKING N. W.
THROUGH D.H.'s #6 & 7 AND THROUGH
TRENCH #1

——— SIGHTED STRUCTURES

– – – – PROJECTED STRUCTURES

SCALE (FT) 0 100 200 300

NORTH STAR MINE



CROSS SECTION LOOKING N.W. THROUGH D.H.'s #4 & 5 AND THROUGH TRENCHES #2 & 7.

——— SIGHTED STRUCTURES

- - - - PROJECTED STRUCTURES

SCALE (FT) 0 100 200 300

CONTENTS

1. Clyde Davis Geologic Report on North Star Mine

2. Mining Lease and Option dated August 10,1967

3. Inventory of Equipment at Mining Site as of 12/5/67

4. Operation report of Roberta Mining and Producing Company

5. Expense Projection as furnished by Roberta Mining and Producing Company

374 2211

BRIGHAM YOUNG UNIVERSITY
PROVO, UTAH
84601

ERNEST L. WILKINSON, PRESIDENT

OFFICE OF UNIVERSITY DEVELOPMENT

August 21, 1967

Mr. O. L. Hill
Wilcox
Arizona

Dear Mr. Hill:

Enclosed is my report on the North Star property, Pinal County, Arizona.

Sincerely,

H. Clyde Davis, Director
Mineral Development

HCD:cc

Enclosure

August 18, 1967

Mr. O. L. Hill
Wilcox, Arizona

GEOLOGIC REPORT

NORTH STAR MINE

Location

The North Star Mining property is located approximately 16 miles south of Florence, Arizona, and 56 miles north of Tucson, Arizona. The mine is located in Sections 7, 8, 9, Township 7 South, Range 10 East. The property is accessible by traveling on U. S. Highway 89 from Tucson to Florence, turning off between mile markers 117 and 118, thence turning west on a good county road for seven miles to the mine.

Physical Features

The North Star mine deposit is in the Sonora Desert section of the Basin and Range province and is in the Salt River Valley, which drains into the Mesa-Phoenix area, located 50 miles to the north. The mine is in a valley trough. All streams in this area are intermittent. The mean annual surface temperature of the area is about 71° Farenheit. The rainfall is small, running about eight to eleven inches a year. The periods of greatest rainfall are in January and February and again in July and August, when sudden and violent local thunderstorms are common. The water table is at approximately 80 feet in depth, according to the incline shaft on the property.

Claim Description

There are 170 claims located in the North Star Mine Group, known as North Star #1 through 5 and others. These are on record in Florence, the county seat for Pinal County.

General Geology

The exact age of the rocks in the area has not been determined, but presumably would date from Pre-Cambrian to recent. Except for the alluvial deposits of Quaternary age, the rocks are all igneous, and the age of most of them can be identified only in a general way by correlation with rocks in the surrounding area. The mountain to the west of the immediate mining area is a Pre-Cambrian granite and schist. The fine-grained granite located in the area of the 300' incline would be of Pre-Cambrian age or of the Mesozoic or early Tertiary age, correlating with the Ray and San Manuel District. The diabase material located in the northeast part of the map intrudes the monzonite and granite. The volcanic rocks and hyolite outcropping on the three red hills where the main structure is open-cut, are of Tertiary age. Many younger dikes were noted on the property, striking in various directions but forming a general pattern from the northwest to the southeast directions.

The general structure indicates the strike to be from a northwest-southeast direction, dipping from 30° to 60° to the southwest. This is noted on Hill No. 1 of the main open-pit area, can be traced to Hill No. 2 and on the Hill No. 3, where the dip is considerably steeper. In the mid-workings of the property, the dip is a little flatter, about 30° west, the nearby 300' shaft is on a 45° dip to the west.

Mineralogy and Ore Deposits

Chrysacolla and malachite are the predominant copper minerals in the oxidized zone of the copper-bearing rhyolite and the fine-grained granite. They are also present in the midworking area where residual sulphides are present. The three red hills have the prominent red color because of the leaching in the rhyolite and presence of oxidized iron. A supergene sulphide zone is

below the oxidized ore, due to deposits of chalcocite and other secondary copper sulphides as replacement of primary pyrites and chalcopyrites, as can be seen in the deposit. For this reason, it will be necessary for a drilling program to determine the extent of a sulphide zone at depth. Chalcocite can either be hypogene or supergene, but in the majority of the cases in Arizona, it has been a supergene deposit as replacements of primary pyrite, chalcopyrite, and boronite. At the present time on Hill No. 1, a large open cut has been made, approximately 100,000 tons of leaching ore on the dump which will run from .50 to 1% copper. A sample of the dump ran .64% CU. This tonnage, with the indicated reserve of the open cut, would justify a small leaching operation. However, the ore reserves could be enlarged by shallow drilling of this enriched zone.

Conclusions and Recommendations

Inferred Reserves. There is an inferred reserve of approximately 1/2 million Ton of oxide copper from the surface exposure. Mineralization is noted of 200 feet wide, 1000 feet long, and 100 feet in depth, at .50-1.00% copper. The gross value would be approximately ~~$0,000,000 per 100'~~ feet depth of leaching material.

Due to the abundance of secondary copper minerals at the surface, secondary sulphides and primary copper minerals, this group has promise as a drilling property in containing a large ore body in depth. In the old incline, depth to 300', silver and copper of high-grade rank was found. This old incline is filled with water, but the dump indicates primary ore. Primary chalcopyrite and boronite were found in the open cut on Hill No. 1.

First -- Geo-physical methods should be used in helping to outline potential favorable mineral areas.

Second -- This primary ore could not have come from any great distance. The claims have a great amount of surface copper mineralization over most the claims. This itself would justify and warrant, first, a limited reconnaissance drilling program going to the depths of 100' for leaching to 1000' primary.

Third -- Detailed drilling program.

Yours very truly,

H. Clyde Davis
Geologist

Attached is a copy of the Magma Copper Company Settlement Sheet, giving the average grade of copper shipped from this group.

MAGMA COPPER COMPANY
Superior, Arizona

FINAL

Settlement No 31-a

Date August 16, 1956

...r lot 175

...r Lot M-31

...e of Ernest R F Randall, Classification Crude Ore

Address 355 So. 4th St., Coolidge, Arizona

...R ...l	Wet Weight Number	Gross	Tare	Net	Moisture %	DRY WEIGHT
	57625	124420	49860	74560	1.0	73814
				37.28	"	36.907

Received May 18, 1956
N. Y. Quotations
Date August 9, 1956
Copper (per lb) .39510
Less .0275
Silver (per oz)
Gold (per oz)

...& ANALYSIS	PAYMENTS PER TON	DEBITS	CREDITS
... 3.50	70.0 lbs per ton, less 8#=62.0 lbs. at .36760 Per lb.		22.7912
... 0.18			
0.003			
5.4			
1.9			
...na 8.0			
...a 68.0	10 units at .04 Per Unit credit	.40	
...ur 1.0			
	Treatment charge	5.00	
	Totals	4.60	22.7912
			18.1912
			671.38

value of 36.907 Dry Tons at $18.1912

Freight 37.28 Tons at $2.36 From Florence, Arizona — 87.98

Transportation Tax — 2.64

Switching — 334.65

payment on preliminary settlement — 97.88

Amount due on shipments 5/13/55 & 5/16/55

Additional Treatment Charge of 10% of metals paid for in excess of $15.00 per ton., Excess is $7.7912 = .77912 X 36.907 — 28.75

Totals 551.90 671.38

129.48

Amount Due Shipper - Voucher No. ~~84164~~

Checked

Approved

...s by jph

CLAIM	DOCKET	PAGE
Black Hills Claims 1 Through 45, including amended Black Hills claim #18	382	64-81
	384	124-129
	385	500-519
	393	508-511

* *

STATE OF ARIZONA }
County of Pinal } ss

I hereby certify that the within instrument was filed and recorded at request of U. S. Title
AUG 31 1967 at 2:20 PM
In Docket DOCKET 315 PAGE 906
on page
Witness my hand and official seal the day and year aforesaid.

SOPHIE M. SMITH,
County Recorder
By Jane Gladson
Deputy Recorder

INDEXED COMPARED

347957

RECORDED OFFICIAL

MINING LEASE AND OPTION

THIS LEASE AND OPTION AGREEMENT made and entered into this 10th day of August, 1967, by and between BENJAMIN FRANKLIN RANDALL, SR., and NETTIE L. RANDALL, his wife, Lessors, and O. L. HILL doing business as THE ROBERTA MINING AND PRODUCING COMPANY, Lessee;

W I T N E S S E T H :

WHEREAS, the Lessors are the owners of certain mining claims in the Picacho Mining District, Pinal County, Arizona; and,

WHEREAS, Lessee is desirous of leasing said claims with an option to purchase the same;

IT IS THEREFORE MUTUALLY AGREED AS FOLLOWS:

1. GRANTING. The Lessors, in consideration of the rents herein provided and performance of the covenants and agreements hereinafter expressed, do hereby grant and lease unto the Lessee those certain unpatented lode mining claims situated in the Picacho Mining District, Pinal County, Arizona as set forth in Annex "A" which is attached to this Mining Lease and Option, and made a part hereof by reference.

2. TERM. This Lease shall be for a term of five (5) years commencing at noon on the 10th day of August, 1967, and expiring at noon on the 10th day of August, 1972, and automatically renewed for an additional terms of five (5) years as long as mining operations are continued on the property by Lessee, unless sooner terminated or forfeited under the provisions of this Lease.

3. ROYALTIES. Lessee shall pay to the Lessors a royalty of Five (5%) Per cent of the gross value of all ores

or concentrates shipped or sold from any part of the leased premises. The Lessee shall pay as advance guaranteed royalty the sum of Five Hundred and No/100 ($500.00) Dollars per month with the guaranteed minimum royalty for the first three (3) months of this Lease being due and payable upon the execution of this Lease and Option, the receipt of which is hereby acknowledged by Lessors.

4. OPTION TO BUY. During the term of this Lease or its extension or extensions if any, the Lessee shall have the option to buy the above described property for the total purchase price of One Million and No/100 ($1,000,000.00) Dollars, payable upon the exercise of the option. It is understood and agreed that all monies paid to the Lessors under the provisions of this Lease, shall apply on the purchase price.

5. DEED. The Lessors agree to execute and deliver a valid standard mining deed to the above described property to the Lessee upon the exercise of his option to buy. It is understood and agreed that the Lessee may deposit the purchase price in escrow with a bank or title company pending the execution and delivery of said deed and examination for merchantable title.

6. LIENS. Lessee shall pay, as due, all claims for work done, services rendered, or material furnished to the leased premises, and shall hold Lessors harmless from any liability arising out of any operations under the Lease. Lessee shall defend all suits or claims at his own expense, and shall keep the leased premises free from any liens. Lessee shall post and keep posted in conspicuous places at or near all parts of the premises where operations under the Lease are in progress, notices of nonliability reciting in substance that the premises are leased and that neither Lessors nor the premises may be held liable for any claims of any kind arising

out of Lessee's operations. In the event of litigation or other legal services to protect the title to the premises or to clear title to the same, should the title be found to be defective in any way, all expenses of said litigation and/or legal services shall be charged to and paid from the royalty interest of Lessors.

7. FIXTURES. Lessee shall have the right during the term of this Lease or within sixty (60) days after the termination of this Lease to remove all machinery, fixtures, and improvements placed or erected on the premises by the Lessee.

8. ASSIGNMENT OR SUBLEASING. Lessee shall not assign or sublease any part of the leased premises without the written consent of Lessors, which shall not unreasonably be withheld. Assignment of the Lease shall terminate all liabilities of Lessee under the Lease except those already accrued.

9. WORKMEN'S COMPENSATION INSURANCE. Lessee assumes full responsibility in case of accident to Lessee, his agent or any person employed on the leased premises, and agrees to hold Lessors harmless from any suits for injury or accident arising out of employment. Lessee shall apply for and maintain at all times workmen's compensation insurance pursuant to the laws of the State of Arizona and shall comply in all respects with any state or federal laws pertaining to employment of persons in mining operations.

10. FORFEITURE. If Lessee violates any of the provisions of this Lease or fails to perform any covenants made by him herein, Lessors may, at their option, forfeit this Lease by giving notice to Lessee of their election to forfeit the Lease, and by specifying in such notice the matters in which Lessee is in default; provided, however, that such forfeiture

shall be inoperative if within thirty (30) days from the effective date of such notice, Lessee remedies the matters of default specified by Lessors.

11. NOTICE. Any written notices provided for herein shall be sent by registered mail, return receipt requested, and addressed as follows:

To Lessors: Benjamin Franklin Randall, Sr.
and Nettie L. Randall
Box 956
Willcox, Arizona

To Lessee: O. L. Hill
The Roberta Mining and Producing Co.
Box 181
Willcox, Arizona

12. SURRENDER. Lessee may surrender this Lease at any time by giving Lessors thirty (30) days' notice, provided that either (1) the notice is given at least thirty (30) days before the end of the assessment year, or (2) the assessment work has been done and the proofs filed as required by law. Surrender shall terminate all obligations of Lessee except those that have already accrued.

13. ARBITRATION. All disputes between Lessors and Lessee regarding the interpretation of this Lease or the performance of the provisions of this Lease shall be settled by arbitration. The arbitrator shall be John Splane. The arbitration hearing shall be held in Tucson, Arizona. The laws of Arizona shall apply to this clause and to the hearing.

14. TAXES. Lessee will pay all taxes levied upon the mine, or mine operation, including improvements, equipment, machinery or other facilities upon and used in connection with mining the premises.

15. COMPLIANCE WITH LAWS. Lessee shall comply with all laws and regulations of the State of Arizona and of the United States pertaining to mining operations, including, but not limited to, those related to employment such as social

security and withholding taxes.

16. METHOD OF WORK. Lessee shall perform all work on the leased premises in accordance with good and economical mining practices, so as to take out the greatest amount of ore possible but with due care taken to develop and preserve the premises as a workable mining property. The premises shall be kept sufficiently timbered, free from loose rock or rubbish and otherwise in a safe and proper condition. The Lessee agrees to leave in its present condition the incline shaft on the premises, it being understood and agreed, however, that the Lessee shall have the right to drill a water well to the bottom of the said incline shaft.

17. RECORDS - INSPECTION. Lessee shall keep accurate records and accounts of all operations under this Lease, and shall permit Lessors or their agents to inspect and make copies of the same at all reasonable times. These records shall include, but not be limited to, copies of all maps, surveys, exploratory drilling logs, geological or assay reports and other operational data prepared from or connected with the leased premises. Lessee agrees to fulfill reasonable requests from the Lessors for reports from these records.

18. INTERFERENCE WITH OPERATIONS. Lessors agree that they will not interfere in any way with Lessee's operations, it being understood and agreed that Lessors will move from their present living quarters but may reestablish their home on the demised premises at a site to be approved by Lessee. It is further understood and agreed that Lessee will not be liable for damage to any of Lessors personal property or improvements caused by the proposed mining operations. It is further understood and agreed that the Lessors shall have the right to sort out and remove all gem rock, if this sorting and removing does not interfere with Lessee's operations. The Lessee will

be entitled to have set off against the royalties paid or to be paid to the Lessors, the market value of the gem rock removed.

19. ASSESSMENT WORK. Lessee shall perform all necessary assessment work upon the leased premises at least thirty (30) days before the end of each assessment period, and file all reports and affidavits when and as required by law.

20. FORCE MAJEURE. If Lessee is prevented from carrying out the terms and provision of this Lease by acts of God, strikes, lockouts, fire, unusual delay in transportation, orders of the government or any duly constituted instrumentality thereof, unavoidable casualties or any causes beyond the control of the Lessee, then said Lessee shall be excused from complying with this Agreement for the period of such interruption, and the time within which said party may do any acts shall be extended by the period of such interruption.

21. INUREMENT. This is an entire agreement between the parties and all previous agreements, understandings, representations between the parties are hereby cancelled, terminated and of no further force or effect. This agreement shall be binding upon and inure to the benefit of the parties hereto, their personal representatives, successors, executors, heirs and assigns.

IN WITNESS WHEREOF, the parties hereto have set their hands this 10th day of August, 1967.

Benjamin Franklin Randall

Benjamin Franklin Randall, Sr.

Nettie L. Randall

Nettie L. Randall

LESSORS

THE ROBERTA MINING AND PRODUCING COMPANY

By O. L. Hill

O. L. Hill

LESSEE

STATE OF ARIZONA)
) ss
COUNTY OF PIMA)

The foregoing Mining Lease and Option was acknowledged

before me this 10th day of August, 1967, by Benjamin Franklin Randall, Sr. and Nettie L. Randall.

Notary Public

My Commission Expires:

July 31 1967

STATE OF ARIZONA)
) ss
COUNTY OF PIMA)

The foregoing Mining Lease and Option was acknowledged before me this 10th day of August, 1967, by O. L. Hill doing business as The Roberta Mining and Producing Company.

Frances J. Kelley
Notary Public

My Commission Expires:

June 27, 1971

Roy Rucker

ROBERTS MINING & PRODUCING CO.
PINAL COUNTY
FLORENCE, ARIZONA

INVENTORY AND EQUIPMENT
AS OF DECEMBER 5, 1962

	Value
1 - Rotary drilling rig - Super Wilson -	$53,000.00
1 - DB Cat - -	16,500.00
1 - Gardner Denver track drill -	rental
1 - trailer house - -	1,500.00
1 - " " - -	1,200.00
1 - 4" Stainless steel acid pump and motor skid mounted -	3,600.00
1 - 2" Stainless steel acid pump and motor skid mounted -	2,400.00
100' Drill steel - collars, etc., -	1,875.00
1954 R-210 Int. truck, Tulsa winch-rolling tailboard	3,500.00
F8 - Ford truck, Tulsa winch, rolling tailboard	2,400.00
1 - All steel tool house -	850.00
Lufkin float trailer tandom -	3,100.00
3,600 ' of 2" P.V.C. pipe; 400' of 3" P.V.C pipe; 400' of 4" P.V.C. pipe and connections	3,500.00
Leaching plant, pad, precip. house, acid pit, set-up complete -	85,000.00
Ore pad and lake - cement and asphalt -	5,000.00
1 - 7 K. W. Light plant -	900.00
1 - Submergible pump 420' setting, gear, head	4,200.00
1 - Pump jack col. and sucker rod 600' setting	3,100.00
1 - 200 Amp. Lincoln welder complete with cutting torch - leads - trailer mounted	1,600.00
Tools assorted	2,000.00
1 - Jaccuzzi pump - 160" col. and pressure tank	900.00
1 - Ford pickup truck - 1964 with rack	1,500.00
1 - G.M.C. pickup - 1954	800.00
1 - Int. pickup 4 wheel drive with tool chests	1,600.00
Miscel. pumps, parts and equipment supplies	3,000.00
	$203,025.00

I hereby certify that the above equipments pledged to secure a note of even date herewith in the amount of One hundred thousand dollars ($100,000) are located on the property of Roberts Mining and Producing Co., Pinal County, 16 miles south of Florence, Arizona and all said equipments shall be maintained and kept in good working order and insured against theft and damage and shall maintain all monthly payments due on said equipments which does not exceed $16,800.

ROBERTA MINING AND PRODUCING COMPANY

PINAL COUNTY

FLORENCE, ARIZONA

THIRTY DAY MONTH OPERATION
REPORT ON CURRENT BASIS WITH
PRESENT EQUIPMENT TO MINE
AND PROCESS FOR COPPER (CU).

YEAR - 1967

Owner and Operator

O. L. Hill dba
Roberta Mining and Producing Co.

ROBERTA MINING AND PRODUCING COMPANY
PINAL COUNTY
FLORENCE, ARIZONA

SUMMARY OF 30 DAY OPERATING STATEMENT

Monthly Gross Profit - 302,400 lbs. @ 35¢ per pound copper, plant site, Florence, Arizona	$105,840.00
Total Monthly Operating Cost (30 days)	52,899.04
One Month Operation Net Gross Income	52,950.96
Annual Net Gross Income	635,411.52
Before taxes and depreciation and financial costs	

CURRENT PRODUCTION PROCEDURE

The report is based on 9 lb. Cu_s per 1,000 gallons solution with 2 lbs. holdover in solution; dropping 7 lbs. Cu. per 1,000 gallons per minute flow through special (U.S. Patent Pending) copper precipitating, stainless steel, vats.

The copper ore assay shows better than one-half of one per cent (1/2 of 1%) Cu. It is mined and treated with sulphuric acid known as the Leaching Process, a standard procedure except for a new system that simplifies the operation for quicker recovery of the copper precipitates developed by O. L. Hill, and operating under the name of Roberta Mining and Producing Company.

Production Acid Flow Schedule:

1,000 gallons per minute produces 7 lbs. Cu. per minute.

1 hour produces 420 lbs. of Cu.

24 hours produces 10,080 lbs. Cu. (per day)

30 days operation produces a total of 302,400 lbs. of Cu.

At 35¢ per pound x 302,400 lbs. Cu.
Net Gross Income per month $105,840.00

OPERATION COSTS BASED ON 302,400 LBS. CU. PRODUCTION PER 30 DAY MONTH

A. Labor Cost

Condition based on 5 days per week, 8 hours per day, or 22 days per month working hours.

Mining - Loading and Dozier: 8 employees @ $4.00 per hour, per worker - 8 x 8 x 30 x $4.00	$7,680.00	
Hauling: 4 employees @ $3.50 per hour, per worker - 4 x 8 x 30 x $3.50	3,360.00	
Leaching: (24 hour runs) 4 employees @ $3.50 per hour, per worker - 4 x 8 x 30 x $3.50	3,360.00	
Maintenance and Repair: 1 employee @ $3.50 per hour 1 x 8 x 22 x $3.50	616.00	
Total Monthly Labor Cost		$15,016.00

B. Direct Operating Cost:

Gas, Fuel and Oil:

1. Diesel - 200 gallons per day @ 19¢ per gallon (30 x 200 x 19¢)	1,140.00	
2. Gas - 100 gallons per day @ 32.9¢ per gallon (30 x 100 x 32.9¢)	987.00	
3. Butane - 500 gallons per day @ 16¢ per gallon (30 x 500 x 16¢)	2,400.00	
4. Oil - 55 gallons per 30 days	69.30	
5. Maintenance, parts, tires and repairs, etc.	100.00	
6. Powder, fuse, caps, etc.	1,373.00	
7. Acid (H_2SO_4), 60 tons per month @ $56.00 per ton	3,360.00	
8. Scrap cans @ $56.00 per ton, 225 tons per month	12,600.00	
		22,029.30

C. General Expenses:

Legal and auditing services, insurance, payroll taxes, traveling expenses, office supplies, telephone and telegraph, auto expenses, miscellaneous, etc.	$ 2,298.24

D. Management:

Executives, supervisor and administration	2,400.00

E. Indirect Operating Cost:

Freight and hauling $800.00 per 40,000 lbs.	$5,500.00	
Royalty payments @ 5% of gross	5,745.60	
		$11,245.60

30 days, total operating cost to produce 302,400 lbs. of Cu.	$52,989.14

ESTIMATED PRODUCTION COST PER EACH POUND OF CU. PRODUCED ON BASIS OF 302,400 LBS. OF CU. ON 30 DAY OPERATION

A.	Labor	.0497
B.	Direct Operating Cost	.0722
C.	General Expenses	.0075
D.	Management	.0372
E.	Indirect Operating Cost	.0080
		.1746

The production cost is approximately 17½¢ to 18¢ per lb. Cu.

Clyde

Exhibit 5

Will be sent

to you - Monday

1/22/68

Tom

P.S. When it arrives,

Please insert it

in place of this page

AMERICAN ANALYTICAL & RESEARCH LABORATORIES
3226 EAST 46TH STREET • TUCSON, ARIZONA 85713

Heinrichs Geo-Exploration Co.
808 West Grant Road
Tucson, Arizona

Attn: Mr. T. Griepentrog

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project # A 003 P1 670

DATE Sept. 27, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1464			0.14				
1465			0.02				
1466			0.05				
1467			0.04				
1468			0.03				
1469			0.06				
1470			0.06				
1471			0.03				
1472			0.06				
1473			0.02				
1474			0.02				
1475			0.01				
1476			0.02				
1477			0.01				
1478			0.01				
1479			0.07				
1480			0.02				
1481			0.02				
1482			0.04				
1483			0.10				
1484			0.03				
1485			0.04				
1486			0.03				
1487			0.01				
1488			0.01				

REGISTERED ASSAYER
CERTIFICATE NO. 6852
PETE S. FLORES
Arizona U. S. A.

11/27/70

ASSAYER - CHEMIST

Invoice # 5340

CHARGES $ 50.00

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project # H 003 PL 670

DATE Sept. 27, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1489			0.02				
1490			0.01				
1491			0.02				
1492			0.01				
1493			0.01				

Invoice # 5340

CHARGES $ 10.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.
Project # A003 P1 670

DATE Sept. 27, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON	
NS # 6 25-33			0.01					
33½			0.02					
33½-35			0.02					
35-36			0.01					
36-39			0.02					
39-42			0.01					
75-78			0.01					
78-82			Trace					

Peter S. Flour
9/27/70

Invoice # 5340

CHARGES $ 16.00

ASSAYER - CHEMIST

3226 East 46th Street

Phone 624-0049

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY Essex International, Inc.

DATE Sept. 29, 1970

SAMPLE MARKED	GOLD OZ / TON	SILVER OZ / TON	PER CENT COPPER	PERCENT LEAD	PERCENT ZINC	PERCENT MOLYBDENUM	PERCENT IRON
1494			0.07				
1495			0.03				
1496			0.02				
1497			0.02				
1498			0.03				
1499			0.02				

REGISTERED ASSAYER
CERTIFICATE NO. 6852
PETE FLORES
Date Signed 9-29-70
Arizona U. S. A.

Invoice # 5345

CHARGES $ 12.00

ASSAYER - CHEMIST

ROTARY DRILLING PROGRAM
North Star Property
Project A 003 P1 670
Pinal County
for
ESSEX INTERNATIONAL, INC.

September 1970

ROTARY DRILLING PROGRAM

NORTH STAR PROPERTY

Project A 003 P1 670

Pinal County

FOR

ESSEX INTERNATIONAL INC.

Tucson, Arizona

September 1970

BY

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5964 TUCSON, ARIZONA 85703
TEL: 623-0578 AREA CODE 602

GEOEX JOB # 557

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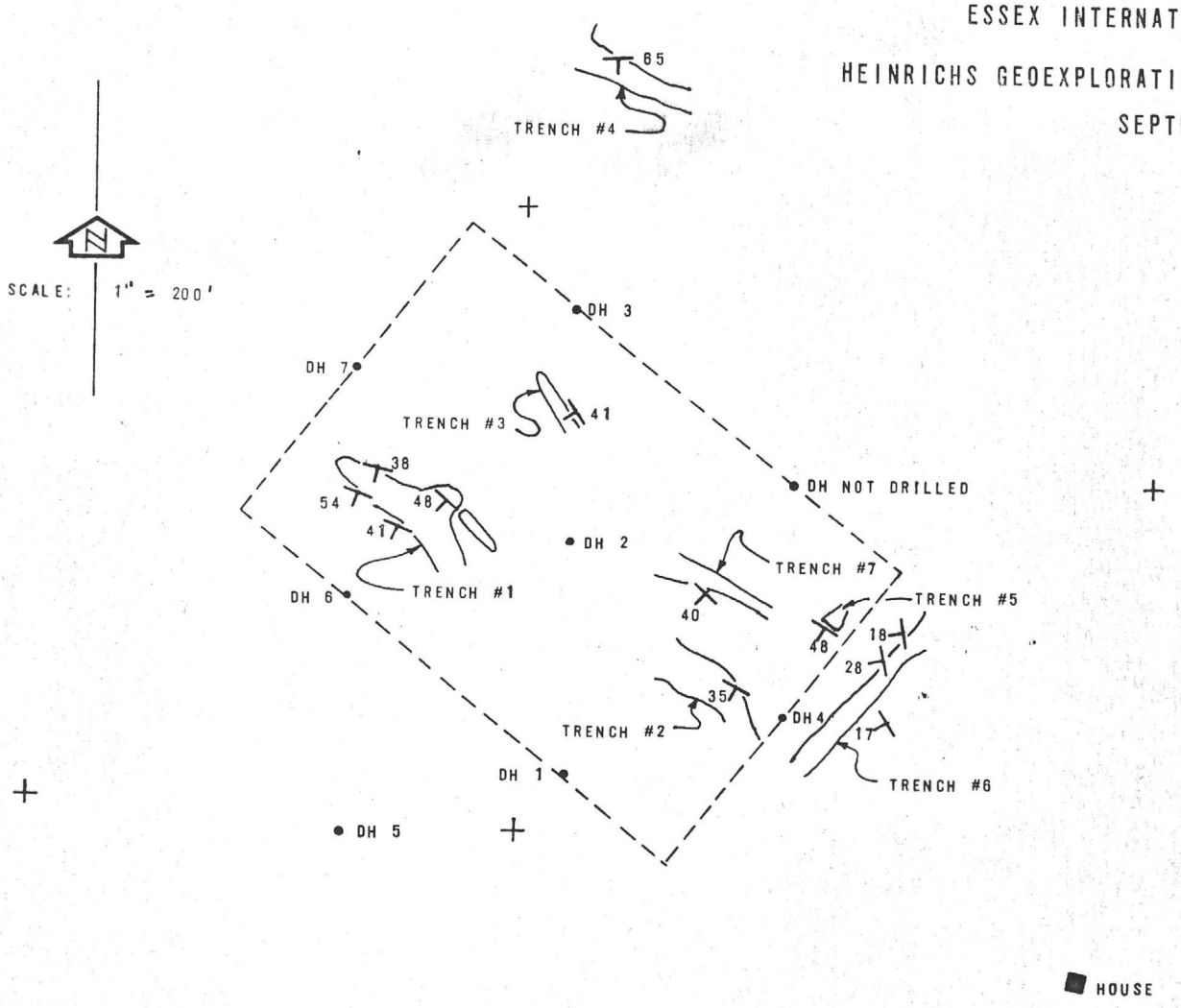
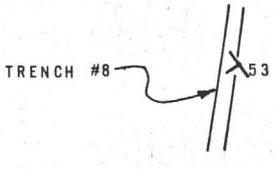
NORTH STAR PROPERTY
for
ESSEX INTERNATIONAL INC.
by
HEINRICHS GEOEXPLORATION COMPANY
SEPTEMBER 1970



+ PANEL FOR AERIAL PHOTOS CONTROL

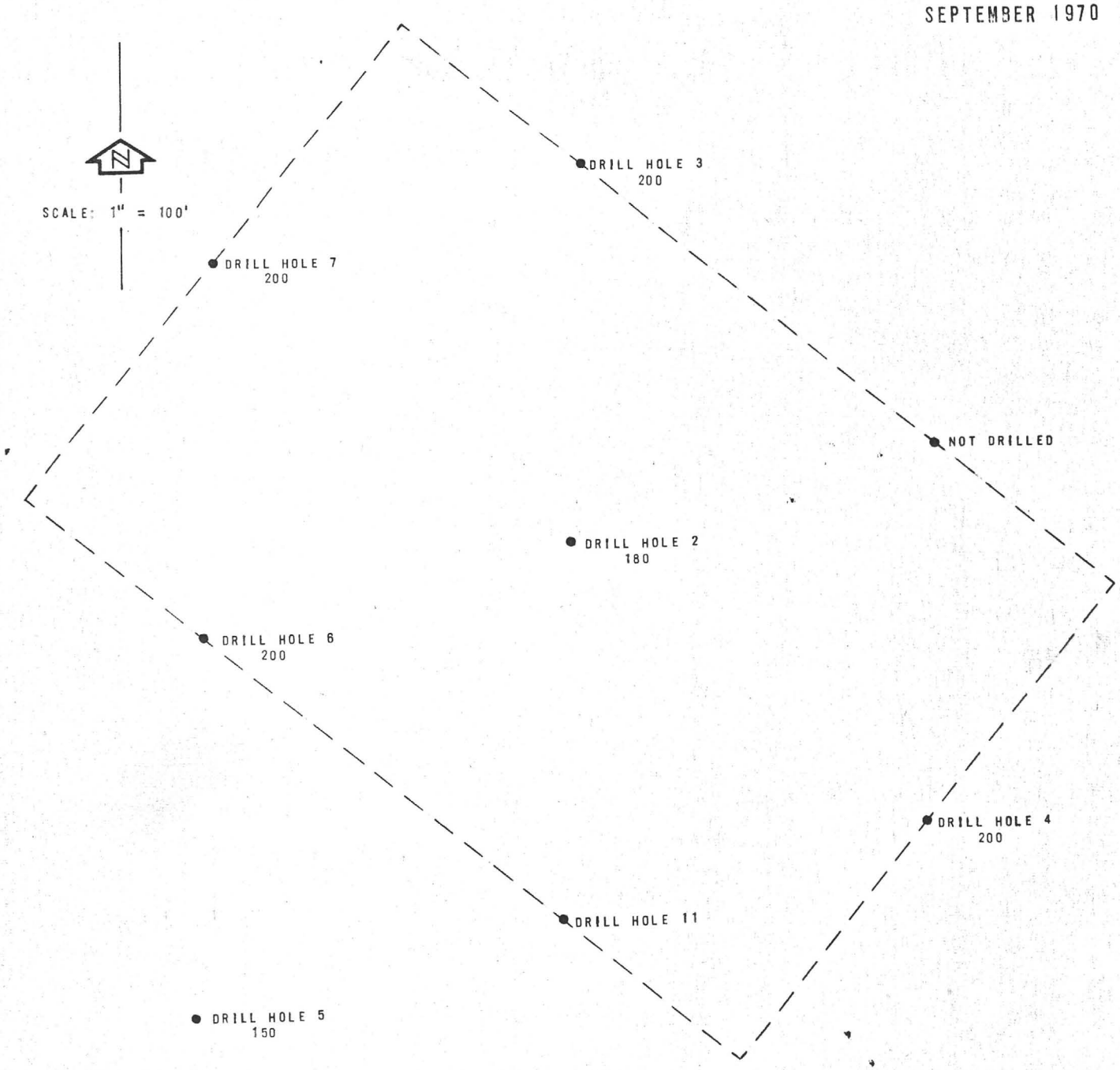
● ROTARY DRILL HOLE

54 DIP & STRIKE - "VEINS"



HEINRICHS GEOEX

ROTARY DRILLING PATTERN PLAN
of
NORTH STAR PROPERTY
for
ESSEX INTERNATIONAL INC.
by
HEINRICHS GEOEXPLORATION COMPANY
SEPTEMBER 1970



HEINRICHS GEOEX

Heinrichs GEOEXploration Company, at the request of ESSEX International Inc., supervised the shallow drilling program to test the near surface copper oxide potential on part of the North Star property between 10 September and 23 September 1970. The field operations were supervised by Tom Griepentrog under the direction of various senior members of the GEOEX staff. The drilling was done by Loman Exploration Company Inc. of Moab, Utah. All holes were drilled with a rotary bit except for 35.5 feet of core from hole number 5. Coring was slow and recovery poor due to the highly fractured rock which required continuous reentry and reaming.

The sampling techniques were very good. Several instances of a high copper value showed up in a five foot sample increment but dropped back to normal background in the next lower increment with very little if any dilution. The sampling results are quite satisfactory in all respects.

The rock is nearly all granitic, very broken and somewhat weathered. Mineralization was extremely localized and confined to specific fracture zones. The cuttings frequently revealed slickensided features and fault gauge indicating an en echelon fracture system. However, only certain fractures in this system were mineralized. The larger mineralized zones (evidenced in existing trenches) showed a halo of alteration, but such alteration was of limited extent. The major mineralized fractures were also

fairly continuous proving that the en echelon pattern was not broken or offset by transverse faults.

The fact that not all fractures are mineralized and alteration patterns are not extensive indicates that the injection of ore bearing hydrothermal fluids occurred over a short time period and that much of the fracturing was post mineralization. There does seem to be a definite association of the mineralized zones with a quartz monzonite-Precambrian granite contact. Perhaps the injection of mineralized fluids occurred during the final stage of this intrusive activity. Unfortunately, the abundance and variety of intrusives in the area makes surface tracing of this contact zone impossible at this time and stage of exploration.

It is interesting to note that some of the mineralized fractures are strongly mineralized. The primary sulfide minerals chalcopyrite and bornite were seen and small quantities of very rich copper ore have been shipped from the property. It is possible that these rich zones extend down-dip. An Induced Polarization survey, oriented with parallel lines normal to the strike of the dominant fracture pattern, should detect any accumulation of such sulfides at depth.

Respectfully submitted,
HEINRICHS GEOEXPLORATION COMPANY

Thomas E. Griepentrog

Thomas E. Griepentrog
Project Geologist

REGISTERED GEOLOGIST
CERTIFICATE NO.
7482
DONALD B.
COOLEY
DATE SIGNED 13 OCT
Arizona U. S. A.

Donald B. Cooley

APPROVED: Donald B. Cooley
Sr. Geologist

P.O. Box 5964
Tucson, Arizona
October 1970

GEOEX Job # 557

Assay Log
Hole # 1
Rotary bit
Total Depth 180'

North Star Project
A 003 P1-670
GEOEX Job # 557
14 and 15 September 1970

Depth	%Cu.
0 - 5'	0.03
5 -10'	0.13
10 -15'	0.03
15 -20'	0.04
20 -25'	0.08
25 -30'	0.24
30 -35'	0.04
35 -40'	0.03
40 -45'	0.02
45 -50'	0.41
50 -55'	0.08
55 -60'	0.02
60 -65'	0.01
65 -70'	0.02
70 -75'	Trace
75 -80'	0.10
80 -85'	0.22
85 -90'	0.10
90 -95'	0.05
95 -100'	0.06
100 -105'	0.11
105 -110'	0.09
110 -115'	0.10
115 -120'	0.19
120 -125'	0.07
125 -130'	0.08
130 -135'	0.22
135 -140'	0.11
140 -145'	0.22
145 -150'	0.22
150 -155'	0.11
155 -160'	0.08
160 -165'	0.04
165 -170'	0.06
170 -175'	0.07
175 -180'	0.03

Assay Log
Hole # 2
Rotary bit
Total Depth 180'

North Star Project
A 003 P1-670
GEOEX Job # 557
15 September 1970

Depth	%Cu.
0 - 20'	0.13
20- 40'	0.06
40- 60'	0.03
60- 80'	0.02
80-100'	0.03
100-120'	0.03
120-140'	0.02
140-160'	0.01
160-180'	0.06

Assay Log
Hole # 3
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
15 and 16 September 1970

Depth	%Cu.
0 - 20'	0.02
20- 40'	0.01
40- 60'	0.02
60- 80'	0.02
80-100'	0.03
100-120'	0.01
120-140'	0.01
140-160'	0.01
160-180'	0.01
180-200'	0.01

Assay Log
Hole # 4
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
September 16 1970

Depth	%Cu.
0 - 5'	0.05
5 - 10'	0.17
10--15'	0.18
15- 20'	0.05
20- 25'	0.03
25- 30'	0.03
30- 35'	0.03
35- 40'	0.02
40- 45'	0.06
45- 50'	0.04
50- 55'	0.02
55- 60'	0.02
60- 65'	0.03
65- 70'	0.05
70- 75'	0.08
75- 80'	0.05
80- 85'	0.02
85- 90'	0.03
90- 95'	0.04
95-100'	0.05
100-105'	0.05
105-110'	0.04
110-115'	0.03
115-120'	0.07
120-125'	0.03
125-130'	0.08
130-135'	0.22
135-140'	0.21
140-145'	0.06
145-150'	0.03
150-155'	0.04
155-160'	0.05
160-165'	0.06
165-170'	0.06
170-175'	0.03
175-180'	0.08
180-185'	0.05
185-190'	0.06
190-195'	0.02
195-200'	0.04

Assay Log
Hole # 5
Rotary bit (Core 0 -35.5' - 10% recovery)
Total Depth 150'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
17 September and 20 September 1970

Depth	%Cu.
0 - 5'	0.02
5 -10'	0.02
10 -15'	0.01
15 -20'	0.04
20 -25'	0.01
25 -30'	0.01
30 -35'	Trace
35 -40'	0.70
40 -45'	2.51
45 -50'	0.07
50 -55'	0.04
55 -60'	0.05
60 -65'	0.03
65 -70'	0.01
70 -75'	0.03
75 -80'	0.01
80 -85'	0.02
85 -90'	Trace
90 -95'	0.01
95-100'	0.03
100-105'	0.01
105-110'	0.02
110-115'	0.04
115-120'	0.01
120-125'	0.04
125-130'	0.02
130-135'	0.01
135-140'	0.01
140-145'	0.05
145-150'	0.02

Assay Log
Hole # 6
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
18 September 1970

Depth	%Cu.
0 - 5'	0.14
5 -10'	0.02
10-15'	0.05
15-20'	0.04
20-25'	0.03
25-33'	0.01
33½'	0.02
33½-35'	0.02
35 -36'	0.01
36 -39'	0.02
39 -42'	0.01
42 -46'	0.06
46 -51'	0.06
51 -55'	0.03
55 -60'	0.06
60 -65'	0.02
65 -70'	0.02
70 -75'	0.01
75 -78'	0.01
78 -82'	Trace
82 -85'	0.02
85 -90'	0.01
90 -95'	0.01
95 -100'	0.07
100 -105'	0.02
105 -110'	0.02
110 -115'	0.02
110 -115'	0.04
115 -120'	0.10
120 -125'	0.03
125 -130'	0.04
130 -135'	0.03
135 -140'	0.01
140 -145'	0.01
145 -150'	0.02
150 -155'	0.01
155 -160'	0.02
160 -165'	0.01
165 -170'	0.01
170 -175'	0.07
175 -180'	0.03
180 -185'	0.02
185 -190'	0.02
190 -195'	0.03
195 -200'	0.02

Assay Log
Hole # 7
Rotary bit
Total Depth 200'

North Star Project
A 003 P1 - 670
GEOEX Job # 557
23 September 1970

Depth	%Cu.
0 - 5'	0.02
5 -10'	0.02
10-15'	0.02
15-20'	0.03
20-25'	0.09
25-30'	0.03
30-35'	0.40
35-40'	0.09
40-45'	0.03
45-50'	0.03
50-55'	0.07
55-60'	0.05
60-65'	0.14
65-70'	0.02
70-75'	0.02
75-80'	0.01
80-85'	0.01
85-90'	0.03
90-95'	0.09
95-100'	0.06
100-105'	0.06
105-110'	0.10
110-115'	0.07
115-120'	0.10
120-125'	0.09
125-130'	0.11
135-140'	0.05
140-145'	0.12
145-150'	0.22
150-155'	0.07
155-160'	0.05
160-165'	0.03
165-170'	0.04
170-175'	0.16
175-180'	0.05
180-185'	0.08
185-190'	0.09
190-195'	0.10
195-200'	0.04