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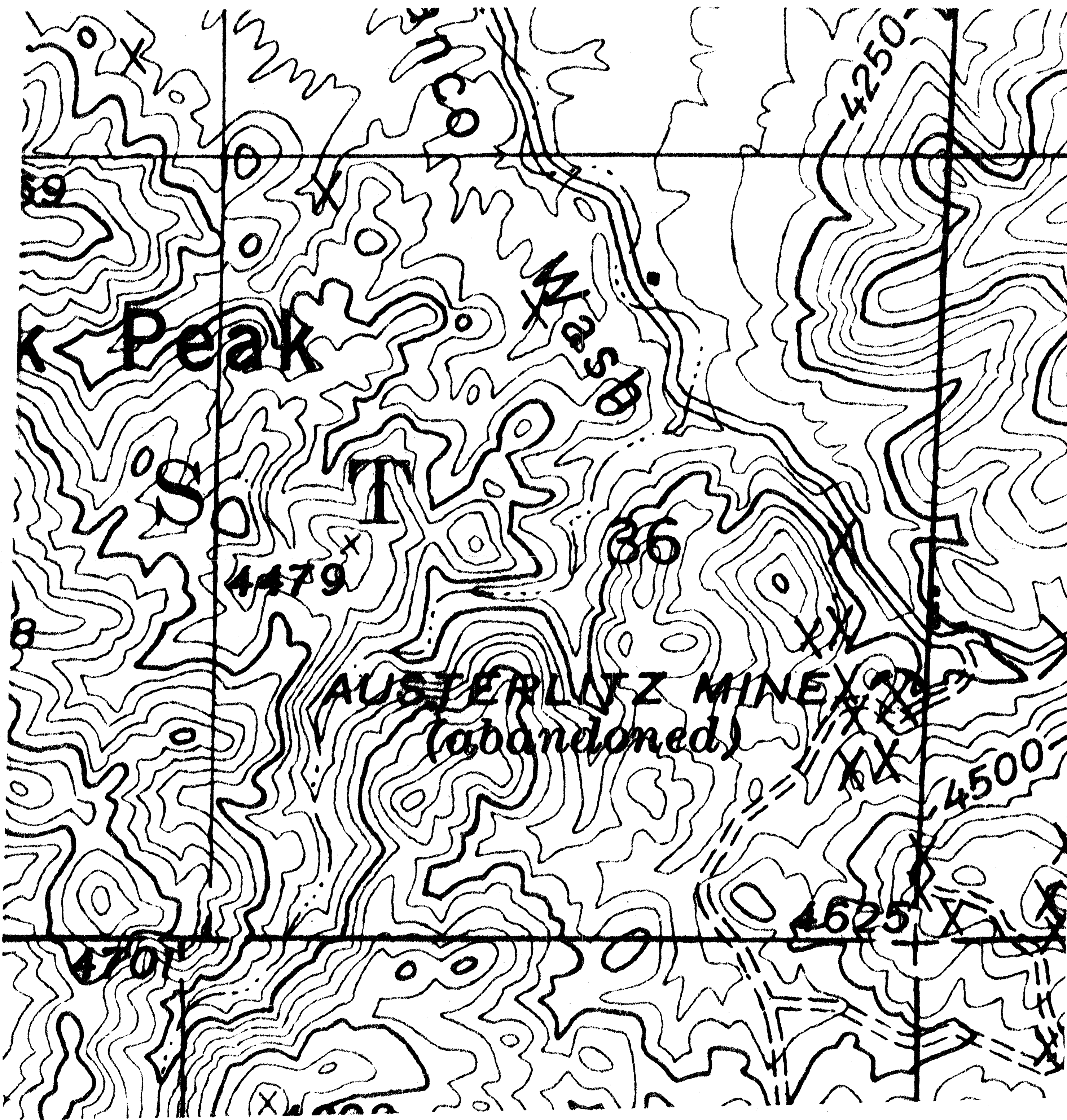
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Peak

S T

4479

36

AUSTERLITZ MINE  
(abandoned)

4500

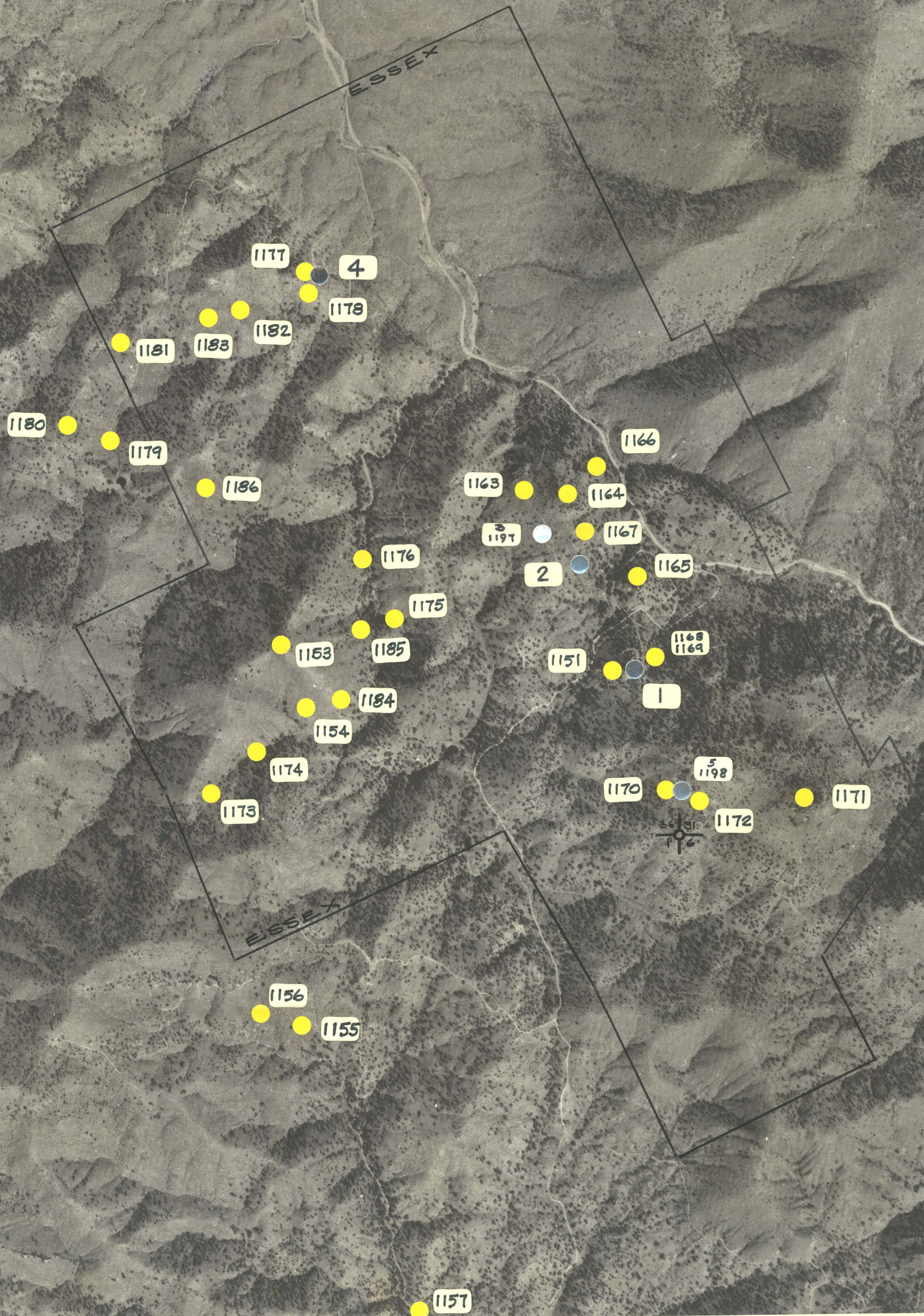
4625

4250

4701



SAMPLES  
AUSTERLITZ MINE





AUSTERLITZ AREA  
PROSPECTS S. OF AREA

9



ESSEX INTERNATIONAL

Date 3-22

LOCATION

AUSTERLITZ

DESCRIPTION

HORTON TUNNEL

SELECTED SAMPLE FROM  
DUMP BY LYALL LIGHTY

ASSAYS

Au-Ag

Nº 01151

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01151



ESSEX INTERNATIONAL

Date 3-22-74

LOCATION

AUSTERLITZ

DESCRIPTION

STOCK PILE - SORTED ORE  
Dump

Up HIGH TERRY CLAIM  
SPECIMEN SHOWING PbS taken by  
JLJ.

ASSAYS

Au-Ag

Nº 01152

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01152



ESSEX INTERNATIONAL

Date 3-28-74

LOCATION

AUSTERLITZ

DESCRIPTION

CREST  
OF HILL

CECIL #7

JKJ  
JKW

ASSAYS

Au-Ag-Cu

Nº 01153

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01153



ESSEX INTERNATIONAL

Date 3-28-74

LOCATION AUSTERLITE

DESCRIPTION

SIDE OF HILL

CECILE # 7 S.W 1/4

ASSAYS

JKJ  
RET

Au-Ag-Cu

Nº 01154

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01154



ESSEX INTERNATIONAL

Date 3-31-74

LOCATION *PHOTO ANOMALY So.*  
DESCRIPTION *OF AUSTELLITZ*

*ACT'D VOLCANICS N.  
OF STOCK*

ASSAYS

*JRW*

*Au - Ag - Cu*  
↓ ↓ ↓  
*.06 .6 .02*

Nº 01155

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01155



ESSEX INTERNATIONAL

Date 3-31-74

LOCATION *PHOTO ANOMALY So. AUSTEE*

DESCRIPTION

*ALT'D VOLCANIC N.  
OF STOCK*

ASSAYS

*SRW*

*Au-Ag-Ca*

*.03 .5 .02*

Nº 01156

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01156



ESSEX INTERNATIONAL

Date 3-21-74

LOCATION *PHOTO ANOM. S. OF AUSTENLITZ*  
DESCRIPTION

*FeOx STAIN'D DUMP  
FROM SMALL ADIT  
VISIBLE PY - CuOx*

ASSAYS

*JKW*

*Au - Ag - Cu  
-03 .5 .09*

Nº 01157

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01157



ESSEX INTERNATIONAL

Date 3-31-74

LOCATION El Oro Mine

DESCRIPTION

NORTH OF MINE ALONG  
STRONG  $\text{FeOx-SiO}_2$  ZONE,  
ALONG WASH

ASSAYS

JRW

Ag - Au

.07 .6

Nº 01161

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01161



ESSEX INTERNATIONAL

Date 3-31-74

LOCATION Old Glory

DESCRIPTION

VOLCANICS(?)

50' SAMPLE ALONG  
CAVED PORTION OF LOWER  
AOIT ± 400' FROM MAIN  
QTZ UN

ASSAYS

JKW

Ag-Au

Nº 01162

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01162



ESSEX INTERNATIONAL

Date

4-2-74

LOCATION

JKE

DESCRIPTION

large ( $10^{\pm}$ ) chip sample  
of outcrop about 10' square on  
NW slope of Ragnarok Hill just below  
Lichty road. Weak quartz veining  
& FeOx. Much weaker mineralization  
than in bulk sample 350' to SE.

ASSAYS

(Au) (Ag)

Nº 01163

ESSEX INTERNATIONAL

Date

ASSAYS

Nº 01163



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-2-74

JKS

DESCRIPTION

Near crest of Ragnarok  
Hill, chip of 3ft square portion of  
outcrop. Possibly slightly stronger  
quartz veining & FeOx than in 1163

ASSAYS

Au Ag

Nº 01164

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01164



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-3-74

DESCRIPTION

JKJ

35' S 60° E from SE  
corner Ragnarock patented  
claim. 3.0 feet chip  
sample of outcrop. See JKJ  
notes.

ASSAYS

Au Ag

Nº 01165

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01165



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-3-74  
JKJ

DESCRIPTION

5.0 + 3.5 ft. deep  
N. side of Pyramid Hill  
along Highway Road.  
See colored air photo

ASSAYS

(A4) (A5)

Nº 01166

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01166

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-3-74 H.

DESCRIPTION

see catalog & see  
photo. Ragnarok hill

2.0 x 3.0 foot sample  
sample of rock

ASSAYS

Al (H)

Nº 01167

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01167



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-4-74

JK Jones

DESCRIPTION

Est. 5 ton stockpile  
on dump of east portal,  
Tunnel. Breccia with abund.  
FeO, quartz, pretty spongy  
& light

ASSAYS

(Au) (Ag)

Nº 01168

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01168

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-4-74

DESCRIPTION

JKJ

25 TON est. stockpile  
of nearly massive quartz with  
moderate (-) FeOx, local FeS<sub>2</sub>.  
On dump of east portal  
Tunnel.

ASSAYS

(Au) (Ag)

Nº 01169

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01169



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

44-74

DESCRIPTION

JKJ

South of sulfide  
dump on Switzerland claim  
4.0 foot vertical chip  
sample. This gently dipping  
band appears to be 50 to 100 ft  
thick

ASSAYS

(Au) (Ag)

Nº 01170

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01170

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-4-74  
JKJ

DESCRIPTION

Grab of quartz laced  
Rock from <sup>near</sup> summit of high  
hill to SE.

ASSAYS

(Au) (Ag)

Nº 01171

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01171



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-4-74

JKJ

DESCRIPTION

High hill to SE, grab  
of reddish dump @ shaft at  
west end of flat. Colored in  
"gmp" but almost all of dump  
is dacite. Sparse quartz &  
sulfides - may have been somewhat  
emphasized in sample.

ASSAYS

(Au) (Ag)

Nº 01172

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01172

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

April 6 1974

DESCRIPTION

JKJ

23 FLAT claim, grab of  
vion stained exposures in  
gulch several hundred feet  
southeast of location  
monument.

ASSAYS

(Au) (Ag)

Nº 01173

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01173



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

Apr. 6 '74

DESCRIPTION

JKV

Grab sample of Fe  
stained exposure of "blue-gray"  
altered rock 10 to 20 feet  
south along gulch from  
Valerie I location monument

ASSAYS

(Au) (Ag)

Nº 01174

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01174

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-7-74

DESCRIPTION

SKJ

"Lyles Canyon"

5.0 foot chip across Fe stained  
zones. See SKJ note (18)

ASSAYS

Au

Ag

Cu

Nº 01175

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01175



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-7-74

DESCRIPTION

JKV

4.0 feet in canyon  
of gtz vened, Fe stained  
zone. See JKS note (19)

ASSAYS

(Au) (Ag)

Nº 01176

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01176

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-9-74

DESCRIPTION 7.0 feet chip sample  
across south wall of Lighty  
bulk sample no. 5

ASSAYS

Au Ag Cu

Nº 01177

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01177



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-9-74

DESCRIPTION

see note (21).

5.0 foot chip sample

ASSAYS

(Au) (Ag)

Nº 01178

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01178

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

*4-9-74*  
*JKJ*

DESCRIPTION

*Dump of tunnel*  
*- fresh rock on top of dump*  
*see note (23)*

ASSAYS

*Au* *Ag*

Nº 01179

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01179

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-9-74

DESCRIPTION

JKJ

7.0 foot chip starting  
@ ~~the~~ end of cut at top of  
hill beyond claims to west.  
see note (24)

ASSAYS

(Au) (Ag)

Nº 01180

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01180



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-9-74

DESCRIPTION

JKJ

5.0 foot chip sample  
of outcrop. See note (25)

ASSAYS

(Au) (Ag)

Nº 01181

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01181

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-9-74

DESCRIPTION

See note (26).

3.5 ft. vertical sample in  
cut. Rock quite hard,  
not a very large sample.

ASSAYS

(Au) (Ag)

Nº 01182

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01182

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-9-74

DESCRIPTION

4.0 ft. vertical

chip sample in face of cut  
several hundred feet up  
ridge to W. of previous sample

ASSAYS

Au Ag

Nº 01183

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01183



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-10-74

DESCRIPTION

6.0' vertical (+) chip  
sample of outcrop. See  
note (30). Same general  
area as sample 01154.

ASSAYS

(Au) (Ag)

Nº 01184

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01184

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-10-74

DESCRIPTION

Grat chip of 6'  
high outcrop at old  
claim corner - see note

(31)

ASSAYS

(Au) (Ag)

Nº 01185

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01185

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

7-10-74

DESCRIPTION

JKJ

4 1/2 ft. ship sample  
across outcrop. See Note

36

ASSAYS

Au Ag

Nº 01186

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01186

ESSEX INTERNATIONAL

Date 4-24-74

LOCATION

DESCRIPTION

Hand picked sulfide  
bearing, quartz rich rock from  
muck pile at bulk sample #3.  
 $\text{FeS}_2$  ++,  $\text{CuFeS}_2$  -, small amts.  
galena, tetrahedrite, covellite  
tarnish.

ASSAYS

As Ag Cu

Nº 01187

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01187



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-24-74

DESCRIPTION outcrop in road cut  
about 100 ft. down road  
from Platoro sample #2  
5.0 ft. vertical. Fair quartz  
good FeOx

ASSAYS

(Au) (Ag)

Nº 01188

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01188

ESSEX INTERNATIONAL

Date 4-27-74

LOCATION

DESCRIPTION *Beyond oak tree 85 ft.  
down road from sample 1188.  
5.0 ft vertical chip of road  
cut out crop. Fair quartz  
but very weak FeOx*

ASSAYS

*(Au) (Ag)*

Nº 01189

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01189

ESSEX INTERNATIONAL

Date 4-24-74

LOCATION

DESCRIPTION

Grab of dump of  
Switzerland Tunnel. Very  
strong sulfides almost entirely  
 $FeS_2$ , much quartz. A little  
of sample from stockpile,  
much from general run of  
dump.

ASSAYS

(Au) (Ag) (Cu)

Nº 01190

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01190

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-24-74

DESCRIPTION

short adit with  
inclined shaft filled with  
water 300' SE of Switzerland  
Tunnel. 5.5 ft. vertical  
chip sample of wall adjacent  
to paint marked sample #10.

ASSAYS

(Au) (Ag)

Nº 01191

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01191

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-24-74

DESCRIPTION *see sample location on photo. About 18" exposure black shale in edge of road SE of end of Switzerland dam*

ASSAYS

(Au) (Ag)

Nº 01192

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01192



ESSEX INTERNATIONAL

Date 4-24-74

LOCATION

DESCRIPTION At west side of 6' deep  
pit about 100' east of Barkley  
Tunnel (east portal). 4.0 ft  
vertical chip sample of outcrop.  
Good quartz & FeOx.

ASSAYS

(Au) (Ag)

Nº 01193

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01193

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-24-74

DESCRIPTION

8.0 foot chip sample  
of outcrop about 200 ft  
<sup>east</sup>  
~~west~~ of Platoro sample #1.  
A few quartz stringers but  
looks pretty barren

ASSAYS

(Au) (Ag)

Nº 01194

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01194

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

DESCRIPTION

*Sample taken @ note  
(5) across 5.0 ft. "vein" of  
good Fe Ox, horizontal  
chip in wall of road cut*

ASSAYS

*(Ad) (Ag)*

Nº 01195

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01195

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

4-24-74

DESCRIPTION

about 100' SE of

1195 in wall of same road  
cut. Fair quartz, FeOx,  
MnOx

ASSAYS

(Au) (Ag)

Nº 01196

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01196

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

Apr. 30 1974

DESCRIPTION Estimated 250 lb. metallurgical sample from site of bulk sample No. 3. Selected from predominantly sulfide bearing rock which comprises est. 10% or less of material in muck pile.

ASSAYS

Nº 01197

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01197

ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

APRIL 30 1974

DESCRIPTION

Estimated 200 lb. grab sample from muck pile at south edge of pit at Platoro bulk sample #5. About 10% of sample is from sulfide bearing rock on dump 75 ft. to west from same working. Metallurgical test sample.

ASSAYS

Nº 01198

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01198



ESSEX INTERNATIONAL

Date \_\_\_\_\_

LOCATION

May 15, 1974

DESCRIPTION

5.0 ft. vertical  
sample of mineralized zone  
at NW end of Ragnarok Hill  
Sample starts @ base of exposed  
zone. Sample 1200 is adjacent  
and above this sample. Both  
samples together represent entire  
thickness.

(Au) (Ag)

(3 assay ton)

Nº 01199

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01199

ESSEX INTERNATIONAL

Date May 15, 1974

LOCATION

DESCRIPTION

3.5' vertical, adjacent  
to and above sample 1199.

ASSAYS

(Au) (Ag)  
(3 assays ton)

Nº 01200

ESSEX INTERNATIONAL

Date \_\_\_\_\_

ASSAYS

Nº 01200

AUSTERLITZ

01151

## Austerlitz Data from F.G. Heinrichs

- ✓ 1) Report on Austerlitz - Ken Jones
- 2) Geology map 1"=500 " "
- ✓ 3) Sample Location - Aerial Photo Black Line
- ✓ 4) Plate 3 - Location map of Patented claims
- ✓ 5) Claim map 5/30/63 by Stranahan
- ✓ 6) Underground map 9/13
- ✓ 7) Samples Map Gregory 6/1935
- ✓ 8) Austerlitz underground Map - 1969 Stranahan
- ✓ 9) Field description - Sample Book
- ✓ 10) Plat - Patent
- 11) Sample Location Switzerland Area
- 12) Reguarok Area - sampling
- ✓ 13) Aerial Photo w/ sample - Drill hole locations  
Received by John A. Qua

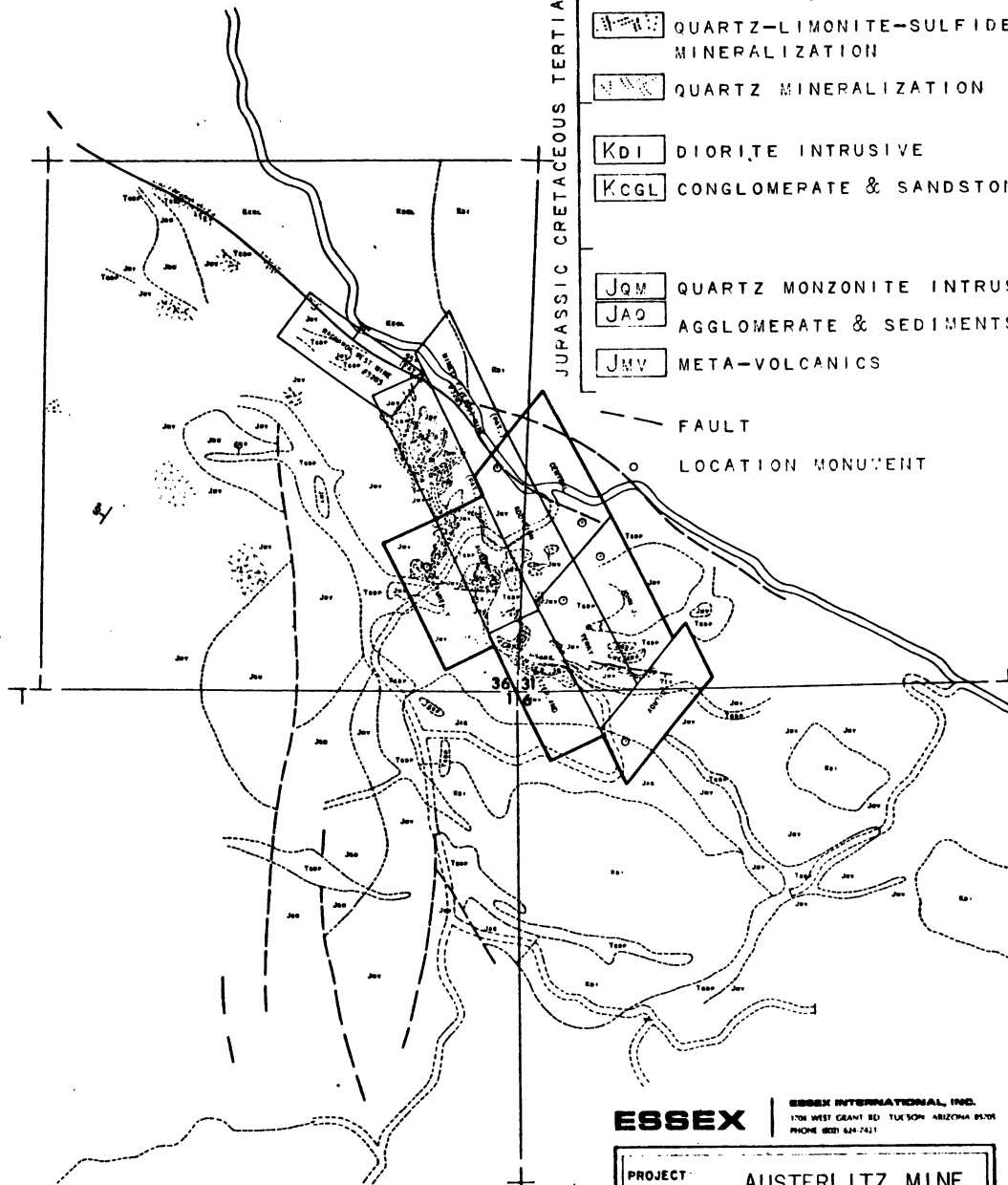
# EXPLANATION

JURASSIC CRETACEOUS TERTIARY

- TGDP** QUARTZ MONZONITE TO GRANO-DIORITE PORPHYRY
- QLS** QUARTZ-LIMONITE-SULFIDE MINERALIZATION
- QM** QUARTZ MINERALIZATION
- KDI** DIORITE INTRUSIVE
- KCGL** CONGLOMERATE & SANDSTONE
- JQM** QUARTZ MONZONITE INTRUSIVE
- JAO** AGGLOMERATE & SEDIMENTS
- JMV** META-VOLCANICS

FAULT

LOCATION MONUMENT



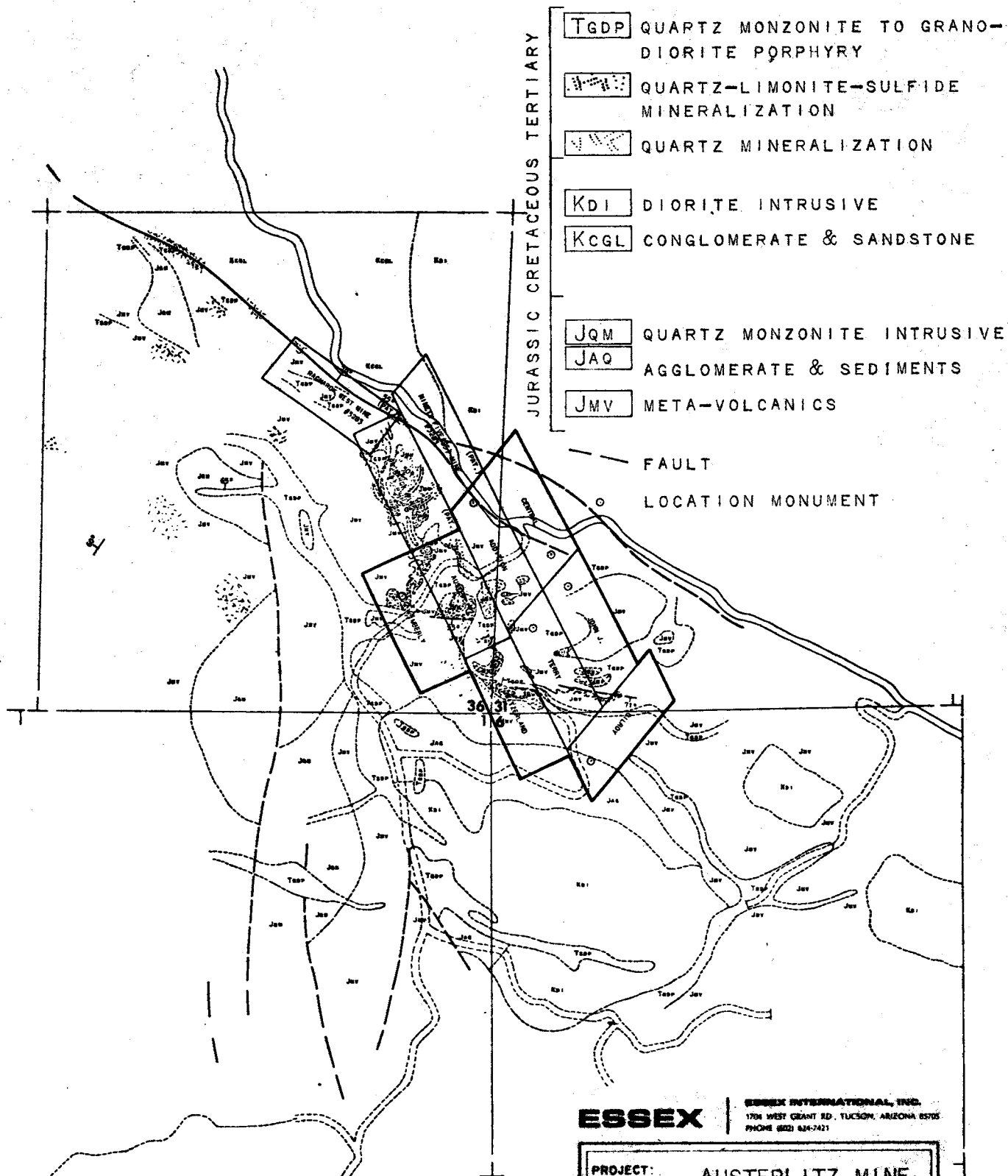
BOUNDARY OF UNPATENTED CLAIMS  
& AREA OF GEOLOGIC STUDY FOR  
ASSESSMENT YEAR 1973-1974

**ESSEX**

ESSEX INTERNATIONAL, INC.  
1706 WEST GRANT RD. TULSON, ARIZONA 85705  
PHONE (602) 624-7411

PROJECT:	AUSTERLITZ MINE
PROSPECT:	
NUMBER:	SANTA CRUZ, ARIZ
COUNTY, STATE:	S36, T22S, R10E
T. R. & SECTION:	S31, T22S, R11E
	S6, T23S, R11E
CLAIM-GEOLOGY MAP	
SCALE:	1" = <del>1640'</del> <sup>2000'</sup> APPR.
DATE:	9/5/74
DATA BY:	K. JONES
PREPARED BY:	J. WILSON

# EXPLANATION



**ESSEX**

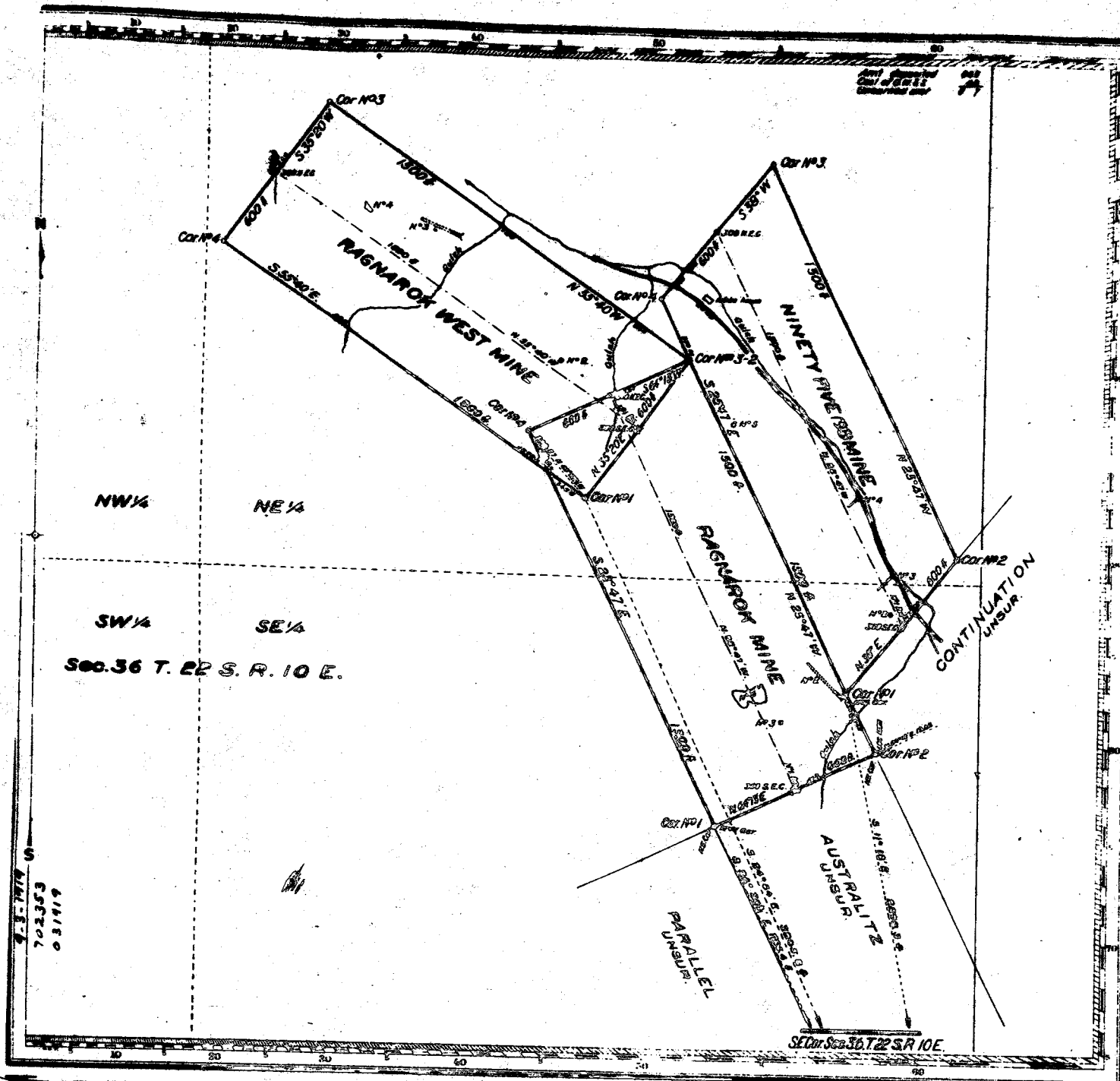
ESSEX INTERNATIONAL, INC.  
1704 WEST GRANT RD., TUCSON, ARIZONA 85705  
PHONE (602) 624-7421

PROJECT: AUSTERLITZ MINE  
PROSPECT: SANTA CRUZ, ARIZ  
NUMBER: S36, T22S, R10E  
COUNTY, STATE: S31, T22S, R11E  
T. R. & SECTION: S6, T23S, R11E  
CLAIM GEOLOGY MAP

SCALE: 1" = 1610' APPR.  
DATE: 9/5/74  
DATA BY: K. JONES  
PREPARED BY: J. WILSON

BOUNDARY OF UNPATENTED CLAIMS  
& AREA OF GEOLOGIC STUDY FOR  
ASSESSMENT YEAR 1973-1974





Claims Located, Ragnarok Mine, Jan. 1, 1898; Ragnarok West Mine, Jan. 1, 1892; Ninety Five (95) Mine, Jan. 1, 1895  
Mineral Survey No. 3283

Lot No. Arizona Land District

**PLAT**

OF THE CLAIM OF

George T. Ballachey  
KNOWN AS THE

**RAGNAROK MINE,  
RAGNAROK WEST MINE AND  
NINETY FIVE (95) MINE LODES**  
IN Oro Blanco MINING DISTRICT,  
Santa Cruz COUNTY, Arizona

Containing an Area of \_\_\_\_\_ Acres  
Scale of 300 Feet to the inch.

Variation 13° 45' E  
SURVEYED April 29-May 7 1916 BY  
Paul E. Fernald  
F.S. Deputy Mineral Surveyor

The Original Field Notes of the Survey of the Mining Claim of  
George T. Ballachey

known as the  
**Ragnarok Mine, Ragnarok West Mine  
and Ninety Five (95) Mine Lodes**

from which this plat has been made under my direction,  
have been examined and approved, and are on file in this Office,  
and I hereby certify that they furnish such an accurate descrip-  
tion of said Mining Claim as will, if incorporated into a patent,  
sufficiently identify the premises, and that such reference is  
made therein to natural objects or permanent monuments as  
will perpetuate and fix the locus thereof.  
I further certify that Five Hundred Dollars worth of labor has  
been expended or improvements made upon said Mining Claims  
by claimant or his grantors and that  
said improvements consist of 7 cuts, 4 tunnels, 3 shafts and  
1 cross-cut.  
Total value \$7520

that the location of said improvements is correctly shown  
upon this plat, and that no portion of said labor or improve-  
ments has been included in the estimate of expenditures  
upon any other claim.  
And I further certify that this is a correct plat of said Mining  
Claim made in conformity with said original field notes of the  
survey thereof, and the same is hereby approved.

F.S. Surveyor General's Office. *Frank A. Smith*  
Phoenix, Arizona F.S. Surveyor General for  
October 5, 1916 Arizona



③



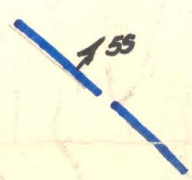
# GEOLOGY

AUSTERLITZ MINE  
ORO BLANCO MINING DIST.  
SANTA CRUZ CO., ARIZ.

SCALE 1 INCH = 500 FEET

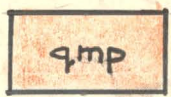


## EXPLANATION



FAULTS

### TERTIARY



DIKES OF QUARTZ MONZONITE  
TO QUARTZ DIORITE PORPHYRY

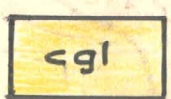


QUARTZ-LIMONITE-SULFIDE MINERALIZATION

### CRETACEOUS

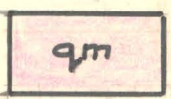


DIORITE INTRUSIVES



CONGLOMERATE & SANDSTONE

### JURASSIC



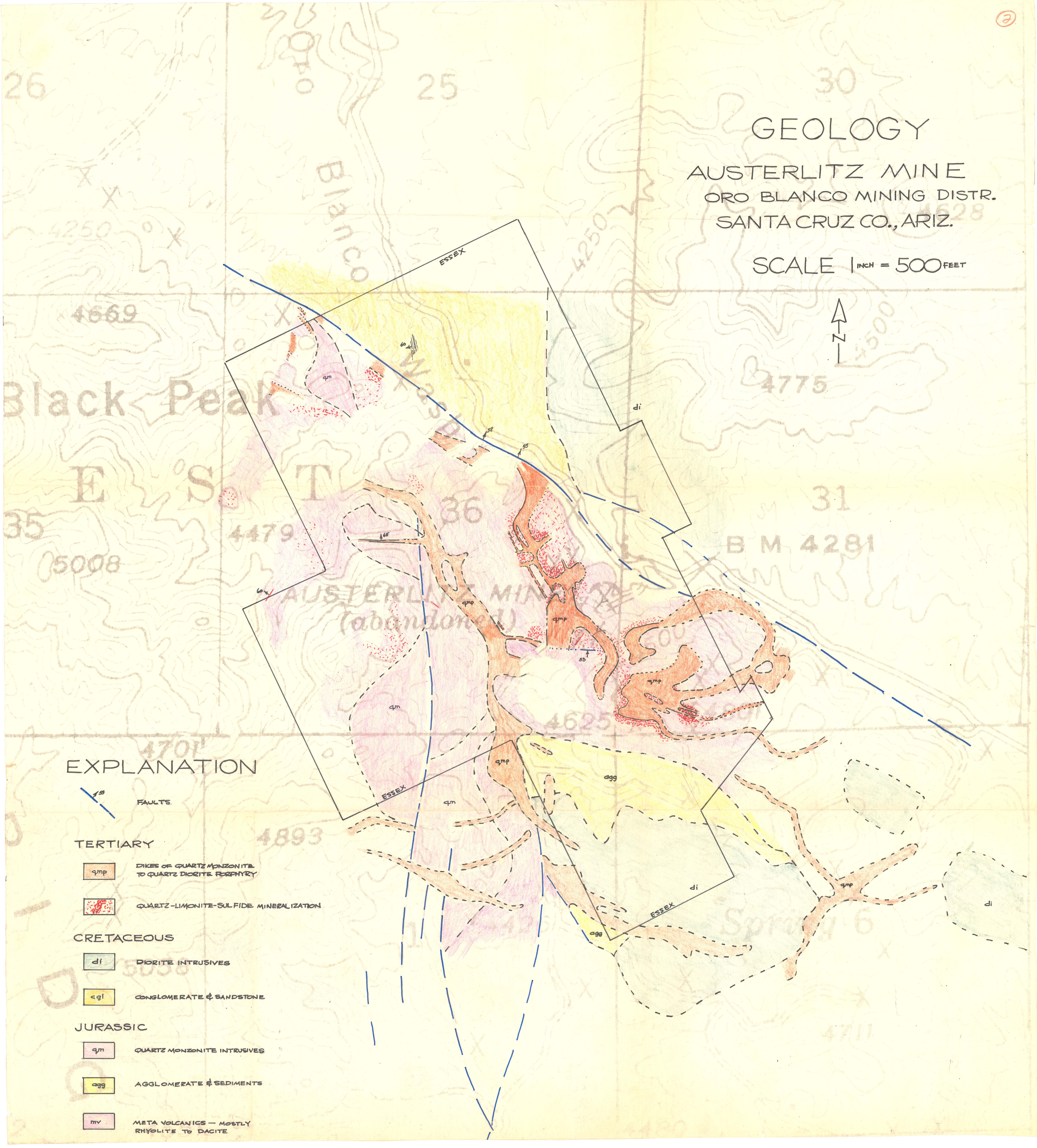
QUARTZ MONZONITE INTRUSIVES



AGGLOMERATE & SEDIMENTS



META VOLCANICS - MOSTLY  
RHYOLITE TO DACITE











PLATE

→ N

RAGNAROK AREA  
1" = 40'

0.005 - 0.28 — ASSAYS OR AU - OR AG

--- LIMIT OF Qtz-Lim-Py (IN RED)

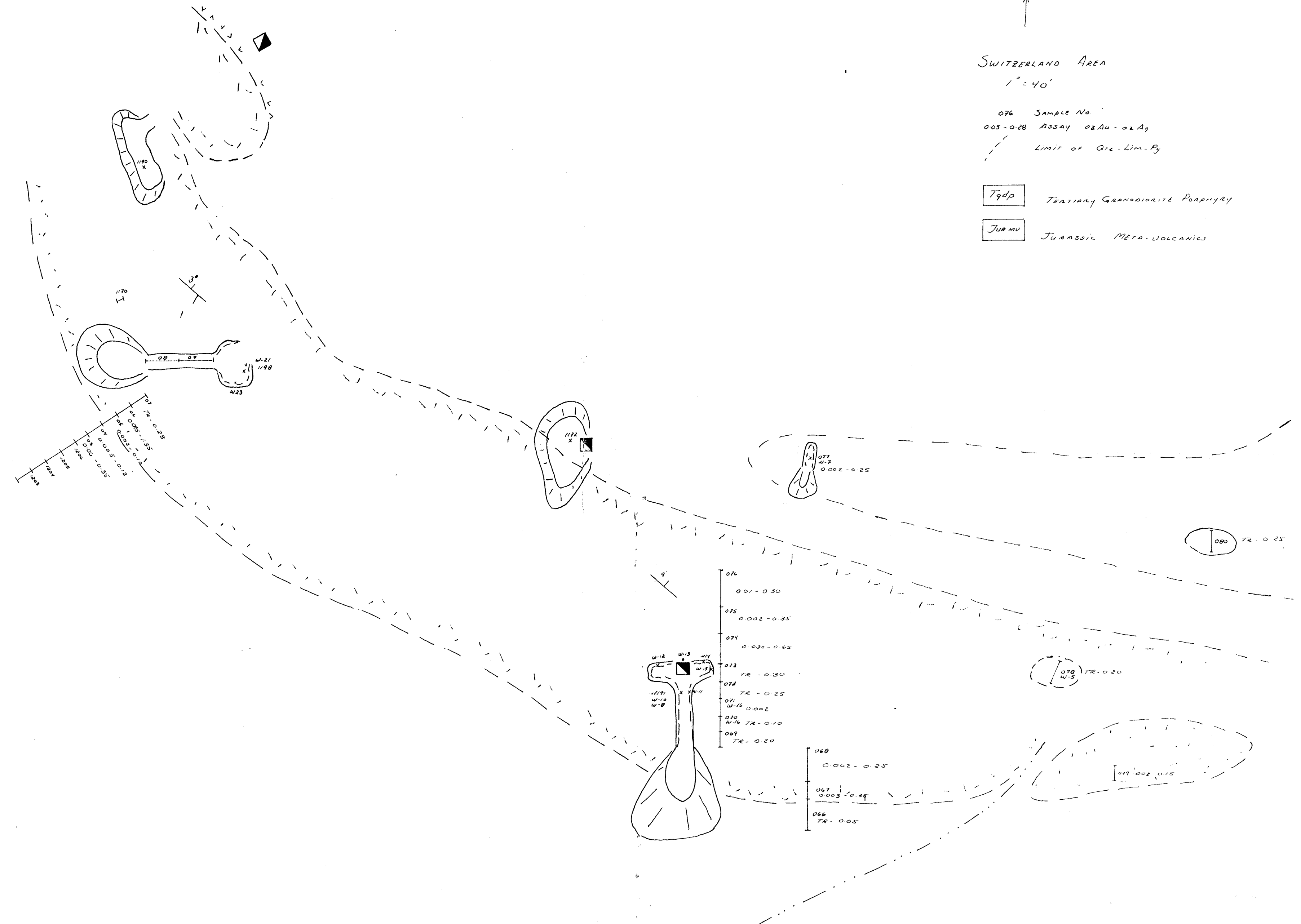
Tgdp TERTIARY GRANODIORITE PORPHYRY

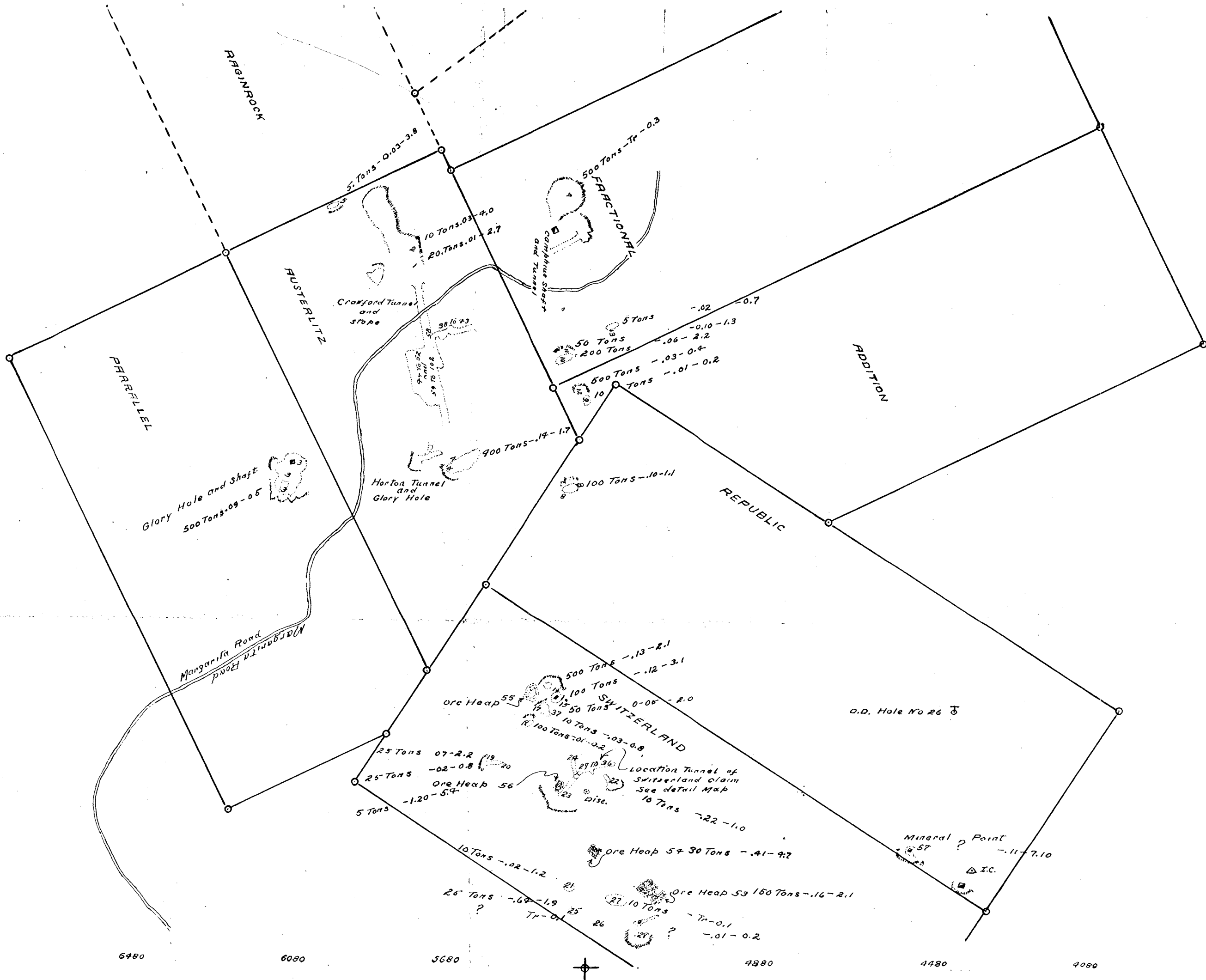
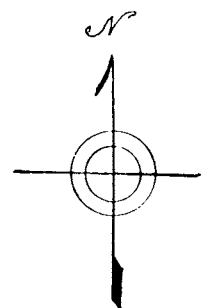
Jmv JURASSIC META-VOLCANICS

$$1'' = 40'$$

Tgdp TERTIARY GRANODIORITE PORPHYRY

Turnu JURASSIC META-VOLCANICS





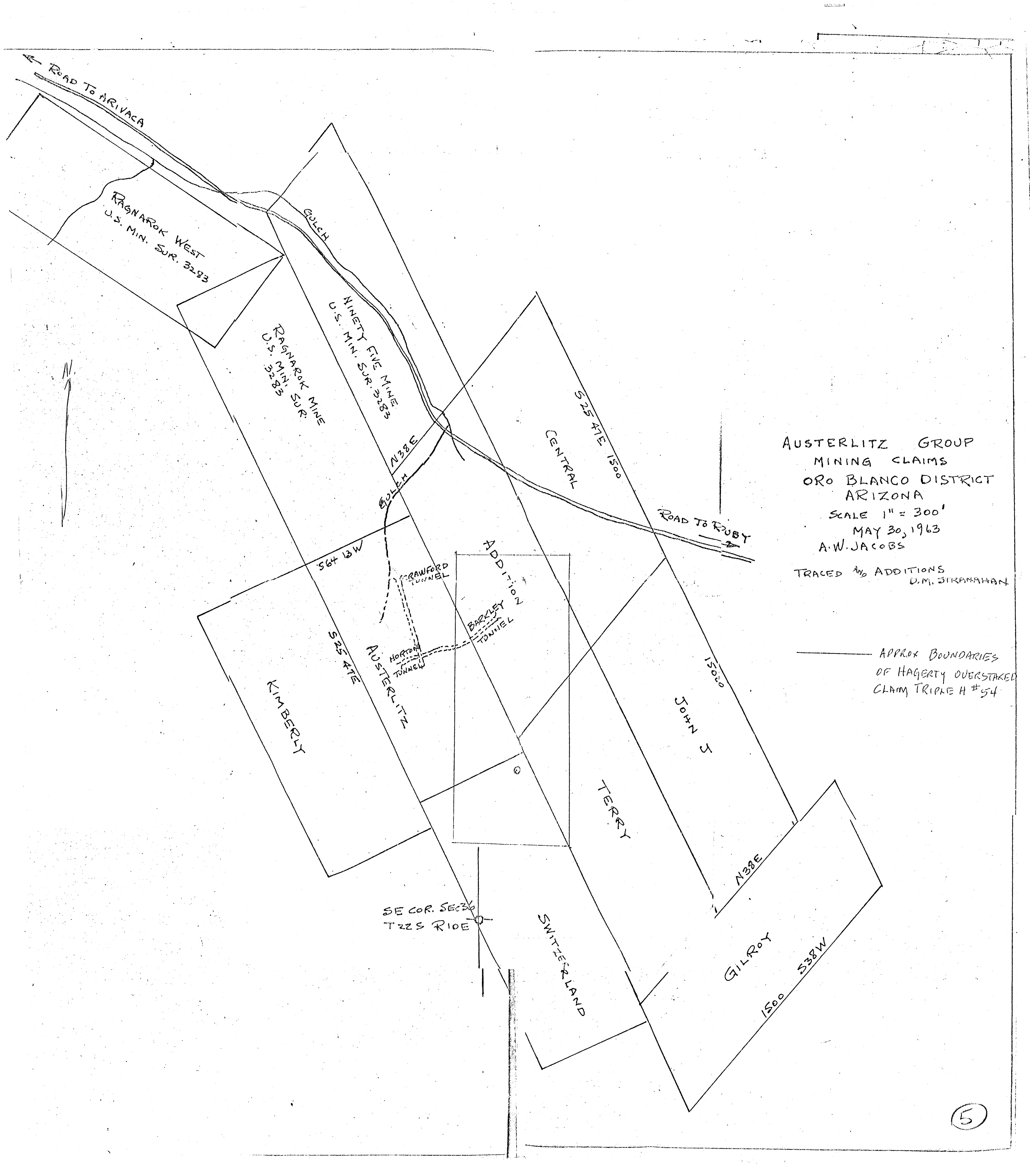
No.	Flu	Ag	No.	Flu	Ag	No.	Flu	Ag	No.	Flu	Ag	No.	Flu	Ag	No.	Flu	Ag
1	0.01	2.2	16	0.02	1.3	31	0.02	0.1	46	0.02	2.2	61	0.02	6.2	76	0.02	1.3
2	0.02	4.2	17	0.02	0.1	32	0.02	1.1	47	0.02	1.2	62	0.02	8.2	77	Trace	0.2
3	0.02	0.5	18	0.02	0.1	33	0.02	0.1	48	0.02	1.0	63	0.02	8.1	78	0.02	1.1
4	0.02	1.2	19	0.02	0.2	34	0.02	0.1	49	0.02	1.4	64	0.02	10.5	79	0.02	1.2
5	0.02	3.8	20	0.02	0.1	35	0.02	0.1	50	0.02	1.2	65	Trace	0.2	80	0.02	1.2
6	No Sample		21	0.02	0.1	36	0.02	1.1	51	0.02	1.2	66	0.02	8.2	81	0.02	2.2
7	7.1	0.2	22	0.02	0.1	37	No Sample		52	0.02	4.2	67	0.02	8.2	82	0.02	2.2
8	0.02	1.1	23	0.02	0.1	38	0.02	2.1	53	0.02	2.1	68	0.02	9.2	83	0.02	3.2
9	0.02	0.1	24	0.02	0.1	39	0.02	0.2	54	0.02	4.2	69	0.02	9.2	84	0.02	3.2
10	0.02	2.2	25	0.02	0.1	40	0.02	0.2	55	0.02	5.2	70	0.02	12.2	85	0.02	3.2
11	0.02	1.2	26	7.1	0.1	41	0.02	2.2	56	0.02	5.2	71	0.02	1.2	86	0.02	5.2
12	0.02	0.2	27	0.02	0.1	42	0.02	10.2	57	0.02	7.2	72	0.02	1.2	87	0.02	5.2
13	0.02	0.2	28	0.02	0.1	43	0.02	1.2	58	0.02	6.2	73	0.02	1.2	88	0.02	1.2
14	0.02	3.1	29	0.02	0.1	44	0.02	1.2	59	0.02	6.2	74	0.02	2.2	89	0.02	1.2
15	0.02	3.1	30	0.02	0.1	45	0.02	1.2	60	0.02	4.2	75	0.02	2.2	90	0.02	1.2

# MAP OF SAMPLES SHOWING GRADE TAKEN FROM THE AUSTERLITZ- REPUBLIC GROUPS

JUNE 1935 SCALE 1 IN. = 200 FT.

F.E. GREGORY





AUSTERLITZ GROUP  
MINING CLAIMS  
ORO BLANCO DISTRICT  
ARIZONA  
SCALE 1" = 300'  
MAY 30, 1963  
A.W. JACOBS

TRACED & ADDITIONS  
D.M. STRANAHAN

APPROX BOUNDARIES  
OF HAGERTY OVERSTAKED  
CLAIM TRIPLE H #54

①

9/5/74

REPORT ON THE AUSTERLITZ MINE  
Oro Blanco Mining District  
Santa Cruz County, Arizona

INTRODUCTION

The Austerlitz Mine was brought to the attention of Essex in March 1974 by Lyall Lichty who had sampled the property in 1963. At that earlier date persistent gold and silver values were encountered but the grade was too low at 1963 prices to justify continued interest. Lichty showed the property to Paul Eimon and J.K. Jones, and was asked by Eimon to investigate the possibility of an option. On March 26, 1974 an option was signed on the three patented and eight unpatented claims owned by Horton Noon, a rancher in the area. Surrounding land appeared to be open for location so an eight-man Essex crew was mobilized and in two days, March 28 and 29, located 28 claims. An unusually high gold assay was obtained near the edge of the new claims and on April 6 four additional claims were located to protect this discovery. Evidence of other ownership was found in the area and is being investigated.

Five days were spent by J.K. Jones mapping geology and taking additional samples. John Wilson conducted a reconnaissance investigation of other mineral occurrences and a photo-anomaly south of the Austerlitz property.

LOCATION

The property is located in the Oro Blanco Mining District in Santa Cruz County, Arizona, about five miles north of the border with Mexico. The nearest town is the small ranch community of Arivaca in Pima County 10 miles to the northwest by graded dirt road. Nogales lies 35 miles to the southeast by way of a very slow mountain road, and Tucson is 65 miles to the north. Most of the claim group falls in Section 36, T.22S., R.10E., but some claims extend into adjacent sections on the north, east, and south. Elevations range from 4050 feet to 4801 feet.

PROPERTY

Horton E. Noon of Nogales, Arizona owns three patented and eight unpatented mining claims covering approximately 220 acres. Noon has signed an option with Lyall Lichty containing the following provisions.

1. Rent and Royalty. A seven month free period is granted after which payments of \$500 per month are required. After Jan. 1, 1976 monthly payments increase to \$1,000. All monthly payments are credited against royalties. A royalty of 10% of net smelter returns will be paid on any ore or concentrate shipped to a smelter. In the event gold and/or silver bullion is produced a royalty of 5% will be paid.
2. Work Obligations. Lessee will perform annual assessment work of \$800 beginning with the current year. Prior to seven months after signing the contract drilling will be commenced and 1000 feet of hole will be completed in the 12 month period following the initial seven month period. By January 1, 1976, a total of 2500 feet of rotary or core drilling will have been completed.
3. Option to Purchase. Lessee can purchase the property for \$1,000,000 by making a down payment of not less than \$100,000 or more than 29% of the total remaining after deducting prior payments and royalties, and paying the balance remaining in 10 equal installments.

The lease and option with Noon was obtained by Lyall Lichty in his name in order to simplify the negotiations and take advantage of a prior relationship. Lichty will transfer the lease and option to Essex at no cost.

### HISTORY, PRODUCTION

In the 1936 Arizona Metal Production bulletin a total of \$90,000 production is credited to the Austerlitz Mine. It seems likely that some early production has not been recorded, and several shipments are known to have been made after 1936.

In 1963 Platoro Corporation drilled, blasted, and shipped five 50-ton samples to the ASARCO smelter at Hayden, Arizona. Results from these samples are listed below.

Number	Gold oz/ton		Silver oz/ton		Copper %	
	Jacobs	ASARCO	Jacobs	ASARCO	Jacobs	ASARCO
1	0.020	0.003	1.05	1.11	0.15	0.09
2	0.015	0.005	1.00	0.91	0.10	0.03
3	0.025	0.045	1.65	1.45	0.26	0.09
4	0.035	0.025	3.15	3.71	1.07	0.90
5	0.030	0.015	1.10	0.82	0.16	0.09
Average:	0.025	0.019	1.59	1.60	0.35	0.24

At 1963 prices this grade was not attractive and Platoro dropped their option on the property. However, at present prices, which for the sake of simplicity are being considered \$150.00 per ounce for gold and \$5.00 per ounce for silver, the precious metal content of the samples would have a value of from \$10.85 to \$11.70 depending on which of the two assays are used.

## GEOLOGY

Geology of the area is complex and will require more detailed study in order to fully evaluate the features controlling gold-silver-copper mineralization. However, geologic observations and sampling by Essex and other references on the area provide a general geologic picture and some details on the ore occurrences.

Host rock to the mineralization is a metamorphosed rhyolite or dacite volcanic rock that appears to strike northwesterly and dip moderately to the northeast. This volcanic rock is thought to be of Jurassic age and is cut by three distinct, younger intrusive rocks. Oldest of the intrusives is a Jurassic quartz monzonite which occurs as several elongate bodies 1000 to 2000 feet west and southwest of the old mines. About 1000 feet south of the mineralized area is a diorite intrusive one-half mile in diameter that is considered to be Cretaceous in age. A series of west to northwest trending irregular quartz diorite porphyry to quartz monzonite porphyry dikes and plugs of Laramide or early Tertiary age are closely associated with mineralization although no mineralization is known to occur in this rock type. One of the most prominent geologic features is a strong north-west trending, northeast dipping fault situated only a few hundred feet north of the mineralized area and separating the volcanic and intrusive rocks on the south from Cretaceous sedimentary rocks and diorite intrusives on the north. No mineralization is known north of the fault in the Austerlitz Mine area, but two miles to the east on the north side of the fault is the Montana Mine at Ruby, Arizona, which through June 1938 had produced the metals listed below.

oz. Gold	oz. Silver	lb. Copper	lb. Lead	lb. Zinc
36,715	3,058,168	3,529,114	46,022,953	38,976,238

If produced at present prices this metal would have a possible value of about \$44,000,000.

In the vicinity of the Austerlitz Mine workings is a northwest trending band of irregular dike and plug-like bodies of quartz monzonite to quartz diorite porphyry about 4000 feet in length and up to 800 feet wide. Mineralization occurs in the altered volcanic rocks immediately adjacent to the intrusives and consists of numerous small irregular quartz veinlets accompanied by variable but generally weak quantities of iron oxides,

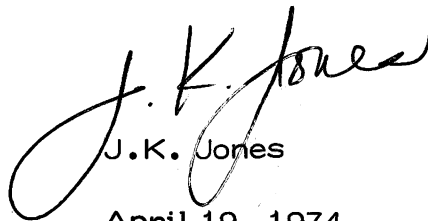
pyrite, and locally chalcopyrite, tetrahedrite and galena. Most mining has taken place in localities where this type of mineralization is comparatively intense with the host volcanic rock being brecciated and largely replaced by hydrothermal quartz. Mineralization as exposed at surface is irregular and discontinuous and may be controlled by irregularities in the intrusive contacts. Four of the Platoro 50 ton samples are from this zone and average 0.023 ounces gold, 1.2 ounces silver, and 0.17% copper. At an assumed price of \$150 per ounce for gold and \$5 per ounce for silver the precious metal contained in this material would have a gross value of \$9.45 per ton. Eight hand samples taken during the recent examination representing the same general locus, but with considerable care taken to select only portions of the mineralized zone exhibiting weaker mineralization than in the Platoro samples, average 0.013 ounces gold and 1.14 ounces silver with a value of \$7.65 per ton. A conservative estimate of the quantity of this character of material is in the range of 40,000 tons for each foot of depth, although much more detailed mapping and sampling will be required for confirmation.

Several other loci of mineralization occur to the west and northwest of the area of known mineralization, but only a few of the available assays from these zones contain substantial gold and silver values. Copper sulfides and oxides are seen, but mineralization and geologic features do not suggest a porphyry copper environment. Oxidation appears to be shallow except on a few narrow fracture zones, but most surface samples have been leached of any original copper content. It is possible that the gold-silver mineralization will be accompanied by 0.10 to 0.26% copper as indicated by Platoro samples, and that this copper would add significantly to the value of the ore.

### CONCLUSIONS

Preliminary investigation indicates the potential for development of 40,000 tons per vertical foot of gold-silver ore containing between \$7.65 and \$9.45 per ton in gold and silver at a price of \$150 per ounce gold and \$5 per ounce silver. Copper content may be sufficient to increase the gross value of this ore by \$1 or more. If this material can be proven to a depth of 100 feet a total of 4 million tons would be developed which could support a 1000 ton per day open pit operation for about 10 years. Some chance exists for developing much larger tonnages, but this involves high risk and considerable exploration time and expense. A logical first step at the Austerlitz property would be to confirm the suggested 40,000 tons per vertical foot by road building and extensive bulk sampling followed by a minimum amount of drilling for exploration at depth. Such a program would cost about \$26,000 and require three months for completion. If results were favorable a much more extensive drilling program costing in the range of \$75,000 to \$90,000 would be required to prove ore at depth.

This prospect represents a good exploration target for a medium sized, low grade, open pit gold, silver, copper operation that can be tested at relatively low cost.

A handwritten signature in dark ink, appearing to read "J.K. Jones". The signature is fluid and cursive, with the first name "J.K." and the last name "Jones" clearly distinguishable.

J.K. Jones

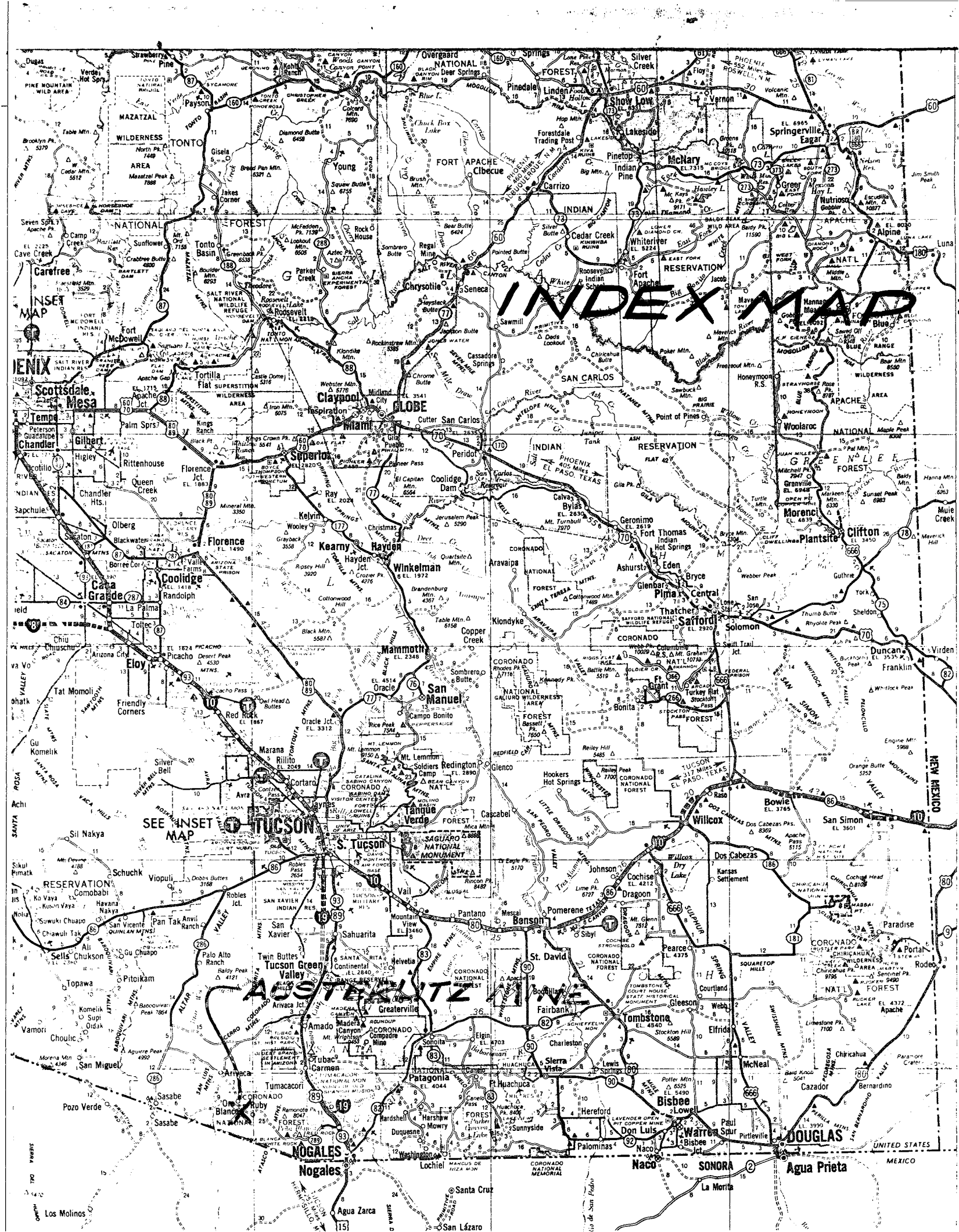
April 19, 1974

JKJ:td

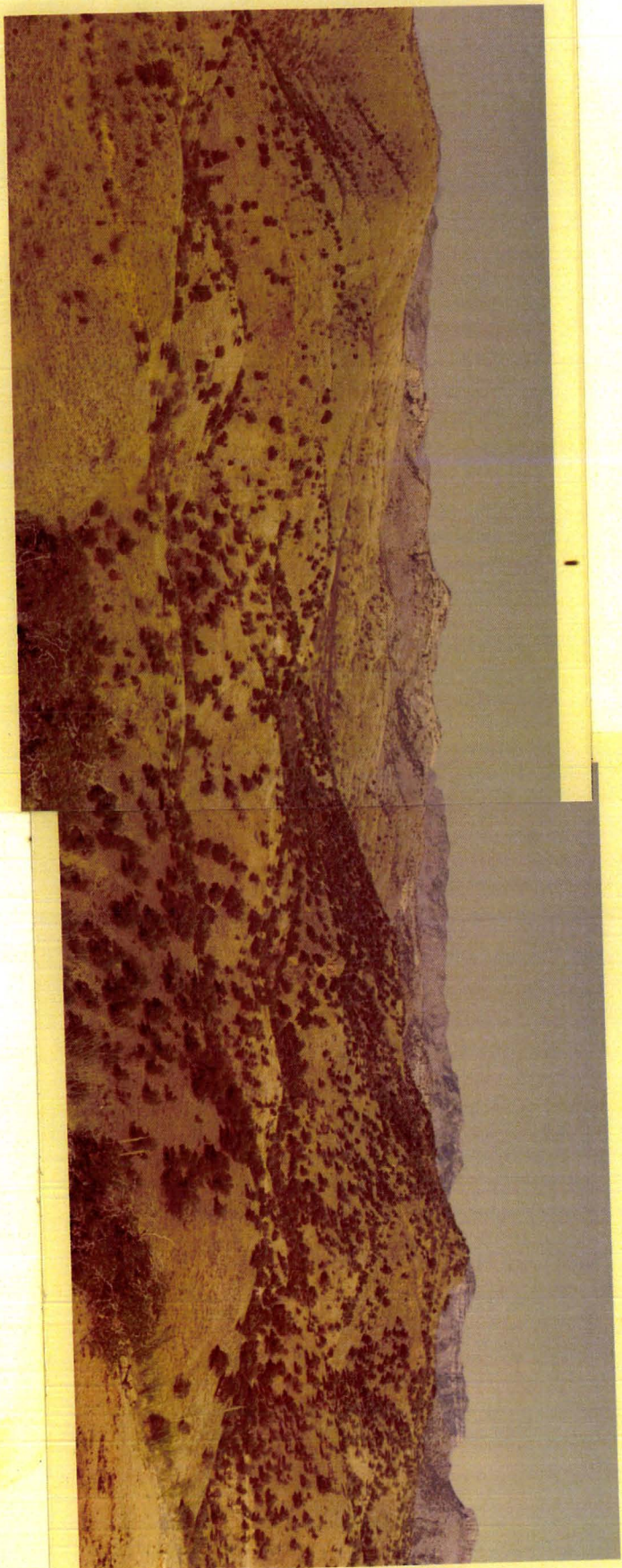
## SUGGESTED AUSTERLITZ EXPLORATION COSTS

1. <u>Road and Drill Site Construction</u>	
120 hours bulldozer time plus supplies, transportation, subsistence, \$55.50 per hour	\$ 6,660
2. <u>Sampling</u>	
Reynaldo Sanchez, contractor @ \$30 per day, helper @ \$20, equipment rental @ \$40, supplies @ \$30, workmans compensation @ \$5 Total \$125 per day for 30 days	3,750
3. <u>Assaying</u>	
250 samples for gold, silver, & copper using 3 assay ton basis @ \$7.50 each = \$1875 Sample bags and other equipment \$325	2,200
4. <u>Claim Validation</u>	
32 claims @ \$125 each	4,000
5. <u>Drilling</u>	
800 feet rotary drilling @ \$6 plus \$400 mobilization	5,200
6. <u>Surveying</u>	
Supplies and equipment	800
7. <u>Air Photos</u>	
Large scale photography, 1" = 100'	1,000
8. <u>Camp Expense</u>	
Trailer rental and space in Arivaca @ \$300 per month	900
9. <u>Vehicle Rental</u>	
3 months @ \$600 per month	1,800
Total	<u>\$26,310</u>









APR • 14

AUSTERLITZ MINE, SANTA CRUZ Co., ARIZ.  
PANORAMA LOOKING NORTHEASTERLY

APRIL 1974





LOOKING NORTH FROM SWITZERLAND CLAIM  
AT RAGNAROK HILL



SITE OF BULK SAMPLES NO. 5 and 1198  
ON SWITZERLAND CLAIM



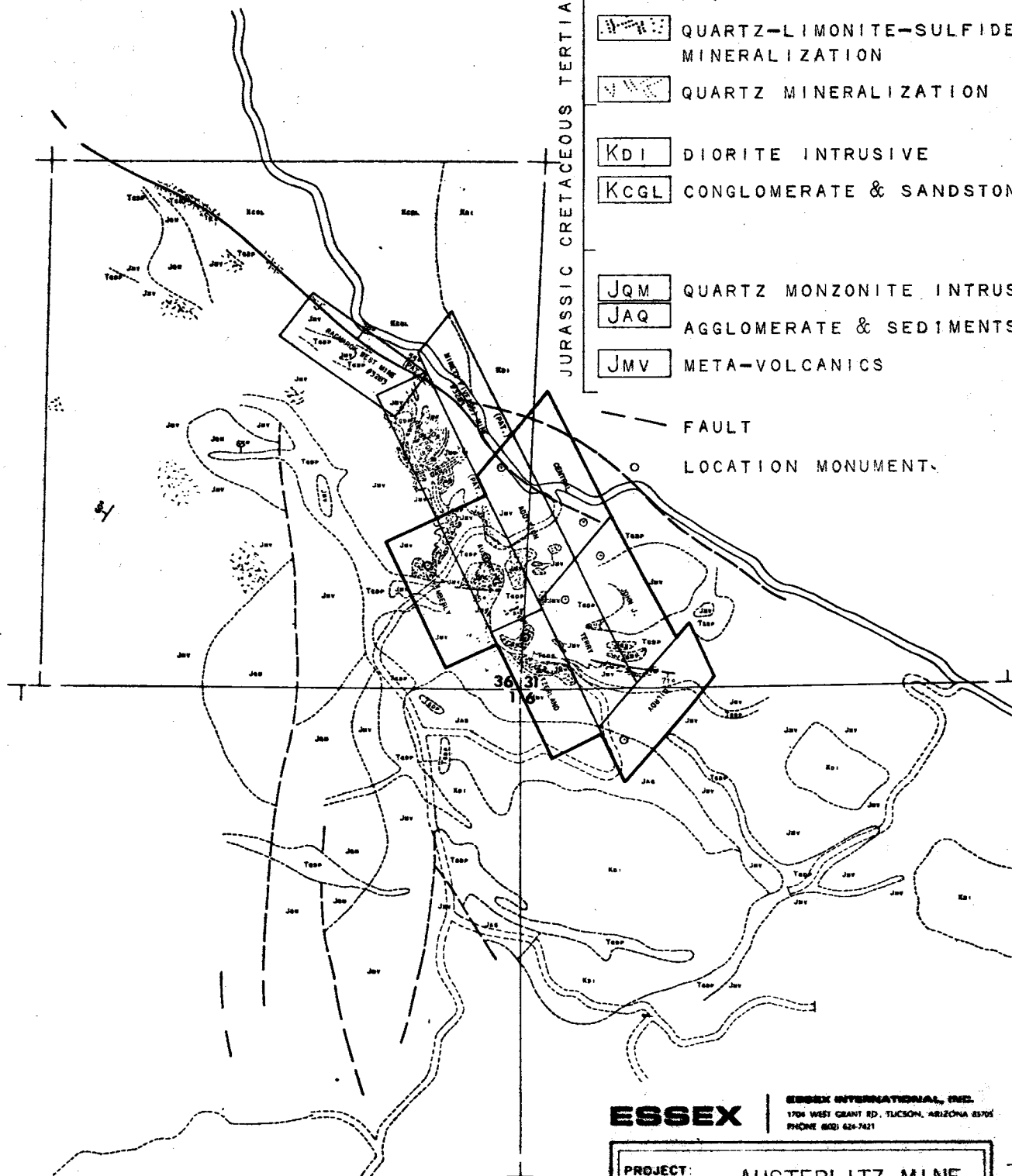
# EXPLANATION

JURASSIC CRETACEOUS TERTIARY

- TGDP** QUARTZ MONZONITE TO GRANO-  
DIORITE PORPHYRY
- QLS** QUARTZ-LIMONITE-SULFIDE  
MINERALIZATION
- QM** QUARTZ MINERALIZATION
- KDI** DIORITE INTRUSIVE
- KCGL** CONGLOMERATE & SANDSTONE
- JQM** QUARTZ MONZONITE INTRUSIVE
- JAQ** AGGLOMERATE & SEDIMENTS
- JMV** META-VOLCANICS

FAULT

LOCATION MONUMENT



**ESSEX**

ESSEX INTERNATIONAL, INC.  
1704 WEST GRANT RD., TULSON, ARIZONA 85705  
PHONE (602) 624-7421

PROJECT: AUSTERLITZ MINE  
PROSPECT:  
NUMBER: SANTA CRUZ, ARIZ  
COUNTY, STATE: S36, T22S, R10E  
T. R. & SECTION: S31, T22S, R11E  
S6, T23S, R11E

## CLAIM-GEOLOGY MAP

SCALE: 1" = 1610' APPR.  
DATE: 9/5/74  
DATA BY: K. JONES  
PREPARED BY: J. WILSON

BOUNDARY OF UNPATENTED CLAIMS  
& AREA OF GEOLOGIC STUDY FOR  
ASSESSMENT YEAR 1973-1974

Sample Number	Description	Oz. Gold	Oz. Silver	% Copper	Value per ton gold @ \$150	Value per ton silver @ \$5	Gross Value
1	50 ton bulk sample	0.020	1.05	0.15	\$ 3.00	\$ 5.25	\$ 8.25
2	" " "	0.015	1.00	0.10	2.25	5.00	7.25
3	" " "	0.025	1.65	0.26	3.75	8.25	12.00
4	" " "	0.035	3.15	1.07	5.25	15.75	21.00
5	" " "	0.030	1.10	0.16	4.50	5.50	10.00
1151	Specimens from small stockpile	0.59	5.0		88.50	25.00	113.50
1153	Chip sample of small outcrop	trace	0.1		-0-	0.50	0.50
1154	5.0 ft chip of outcrop	0.17	0.7		25.50	3.50	29.00
1155	Grab	0.06	0.6	0.02	9.00	3.00	12.00
1156	"	0.03	0.5	0.02	4.50	2.50	7.00
1157	"	0.03	0.5	0.09	4.50	2.50	7.00
1163	Chip of 10 ft square outcrop	0.02	0.7		3.00	3.50	6.50
1164	Chip of 3 ft square outcrop	0.02	0.5		3.00	2.50	5.50
1165	3.0 ft chip of outcrop	0.005	0.8		0.75	4.00	4.75
1166	5.0 ft " "	0.01	1.0		1.50	5.00	6.50
1167	Chip of 2 ft by 3 ft outcrop	0.02	1.4		3.00	7.00	10.00
1168	Grab of est. 5 ton stockpile	0.22	7.3		33.00	36.50	69.50
1169	Grab of est. 25 ton stockpile	0.02	1.4		3.00	7.00	10.00
1170	4.0 ft vertical chip of outcrop	0.01	0.7		1.50	3.50	5.00
1171	Grab of outcrop	0.01	0.8		1.50	4.00	5.50
1172	Grab of dump of shaft	0.01	3.2		1.50	16.00	17.50
1173	Grab of outcrop in gulch	trace	0.25		-0-	1.25	1.25
1174	" " " "	0.005	0.15		0.75	0.75	1.50
1175	5.0 ft chip sample	0.005	0.35		0.75	1.75	2.50
1176	4.0 ft chip sample	trace	0.20		-0-	1.00	1.00
1177	7.0 ft chip sample	0.05	5.35		7.50	26.75	34.25
1178	5.0 ft chip sample of outcrop	trace	0.15		-0-	0.75	0.75
1179	Grab of dump of tunnel	trace	0.30		-0-	1.50	1.50
1180	7.0 ft horizontal chip sample	0.005	0.35		0.75	1.75	2.50
1181	5.0 ft chip sample of outcrop	0.005	0.15		0.75	0.75	1.50
1182	3.5 ft vertical chip	0.03	0.20		4.50	1.00	5.50
1183	4.0 ft vertical chip	0.01	0.15		1.50	0.75	2.25
1184	6.0 ft vertical chip of outcrop	trace	0.10		-0-	0.50	0.50
1185	Grab of 6 ft high outcrop	trace	0.15		-0-	0.75	0.75
1186	4.5 ft chip of outcrop	0.005	0.20		0.75	1.00	1.75

Value per ton, gold @ \$150/400	Value per ton silver @ \$5/400	Gross Value
\$ 3.00	\$ 5.25	\$ 8.25
2.25	5.00	7.25
3.75	8.25	12.00
5.25	15.75	21.00
4.50	5.50	10.00
88.50	25.00	113.50
-0-	0.50	0.50
25.50	3.50	29.00
9.00	3.00	12.00
4.50	2.50	7.00
4.50	2.50	7.00
3.00	3.50	6.50
3.00	2.50	5.50
0.75	4.00	4.75
1.50	5.00	6.50
3.00	7.00	10.00
33.00	36.50	69.50
3.00	7.00	10.00
1.50	3.50	5.00
1.50	4.00	5.50
1.50	16.00	17.50
-0-	1.25	1.25
0.75	0.75	1.50
0.75	1.75	2.50
-0-	1.00	1.00
7.50	26.75	34.25
-0-	0.75	0.75
-0-	1.50	1.50
0.75	1.75	2.50
0.75	0.75	1.50
4.50	1.00	5.50
1.50	0.75	2.25
-0-	0.50	0.50
-0-	0.75	0.75
0.75	1.00	1.75

# Comment

Samples taken by Platoro Corp. in 1963 and shipped to ASARCO's Hayden smelter.

High grade ore on dump of Horton Tunnel.  
Weak manganese stain.

Good iron oxide.

Altered volcanics north of stock

" " " "

Iron stained mine dump, some pyrite, & copper oxide.

Weak quartz veinlets and iron oxides.

" " " "

Fair quartz veinlets, weak iron oxides.

Represents at least 100 ft. width.

Breccia, abundant iron oxide and spongy quartz.

Massive white quartz, some iron oxide & pyrite.

May represent 50 to 100 ft. thickness.

Abundant quartz veinlets, little iron oxide.

Very weak quartz and pyrite.

Moderate iron oxides.

Altered volcanics, fair iron oxides.

Iron stained bank exposed in canyon

Fair iron oxides and quartz veinlets.

South wall of bulk sample locality No.

Strong quartz veinlets, very weak iron oxide.

Minor quartz veinlets and pyrite.

Good iron oxides, traces copper oxides.

Broken, weak iron oxides.

Good quartz veinlets and iron oxides.

Moderate quartz, iron oxides, black veinlets.

Weak to moderate iron oxides.

Weak quartz and iron oxides.

Iron stained, dark colored outcrop.



PLEASE RETURN TO  
E. GROVER HEINRICH

## A REPORT ON THE AUSTERLITZ MINE

### Santa Cruz County, Arizona

The Austerlitz property was introduced to the Essex staff by Mr. Lyall Lichty in March of 1974. Lichty had previously, in 1963, sampled the area by taking several 50-ton samples and had obtained fairly persistent gold and silver values. Following Lichty's introduction and a cursory property examination by P.I. Eimon and J.K. Jones, a property option was signed with the owner, Horton Noon. Noon, a local rancher, controlled the heart of the old camp with three patented and eight unpatented mining claims. Following the signing of the property option agreement, an additional 32 claims were staked in the area by Essex personnel (Pl. 1).

A total of 17 man-days were spent in the field by J.K. Jones, W. Brown, and J.R. Wilson, mapping and extensively sampling the area.

### Location and Access

The Austerlitz property is located in southern Santa Cruz County, Arizona approximately five miles north of the Mexican Border (Fig. 1). Access to the property can be obtained by rough, winding roads from either Arivaca, Arizona, 10 miles to the northwest, or Nogales, Arizona, 35 miles to the southeast (Fig. 1).

### Past Production

Production records indicate that approximately \$90,000 in gold was extracted from the property through 1936. It is quite likely that there was earlier unrecorded production and certainly later unrecorded production.

In 1963 Platero Corporation mined and shipped five 50-ton samples to the ASARCO smelter at Hayden, Arizona. The smelter receipts and assay results are shown on the following page.

Number	Gold oz/ton		Silver oz/ton		Copper%	
	Jacobs	ASARCO	Jacobs	ASARCO	Jacobs	ASARCO
1	0.020	0.003	1.05	1.11	0.15	0.09
2	0.015	0.005	1.00	0.91	0.10	0.03
3	0.025	0.045	1.65	1.45	0.26	0.09
4	0.035	0.025	3.15	3.71	1.07	0.90
5	0.030	0.015	1.10	0.82	0.16	0.09
Average:	0.025	0.019	1.59	1.60	0.35	0.24

Although all the values were quite low by 1963 standards, these same assay values, in view of 1974 Ag-Au prices, were what originally interested the Essex staff in the property.

#### Scope and Purpose

~~It was~~ <sup>was</sup> The purpose of this investigation <sup>was</sup> to evaluate the potential for the existence of a small to medium sized, open-pit, low grade gold-silver-(copper) deposit. The initial phase of this program consisted of geological mapping on a scale of 1" = 500' and a random geochemical sampling program. ~~As a result of this initial phase, it was concluded that geological mapping on a scale of 1" = 500' and a random geochemical sampling program.~~ As a result of this initial phase, it was concluded that only two areas were sufficiently large enough and continuously mineralized enough to warrant further work. These two areas were then more systematically sampled and ~~more extensively~~ mapped.

Systematic sampling of the two favorable areas consisted of traversing the apparent mineralized zones at several places and channel sampling all outcrop along this traverse. Channel sample cuts ranged from 5 feet to approximately 40 feet in length depending on outcrop availability. All samples taken weighed between 15 and 20 pounds and were assayed at Jacobs Assay Office in Tucson, on a three assay ton basis.

#### Geology

The rocks in the vicinity of the Austerlitz Mine consist of Jurassic, Cretaceous and Tertiary intrusive rocks, Jurassic volcanic rocks and Jurassic and Cretaceous sedimentary rocks.

The oldest of the intrusive rocks appears to be the Jurassic(?) quartz monzonite plugs observed in the western portion of the map area. These plugs are generally elongate in a north-south direction and range

in size from approximately 400 feet to 1000 feet in the long dimension and 200 feet to 500 feet in the shorter dimension. The quartz monzonite is generally medium grained and generally shows no more than weak chloritically altered mafic minerals. The next youngest intrusive unit appears to be the Cretaceous(?) diorite. These intrusives are generally in the southeastern and north central portions of the mapped area and generally range in size from less than 200 feet to over 1000 feet in diameter. Alteration is generally quite weakly exhibited in this rock and consists only of local chloritic alteration. The youngest of the intrusive rocks observed in the area are the Tertiary(?) quartz monzonite porphyry to granodiorite porphyry dikes. These dikes generally strike northwesterly and are always in close spatial relationship to the observed gold-silver mineralization. These dikes are probably also genetically related to mineralization.

The oldest of the rocks in the area appear to be the Jurassic(?) Cobre Ridge tuff. These rocks in general strike northwesterly and *dip* gently to the northeast. The Cobre Ridge tuff is actually a welded rhyolitic to dacitic tuff and is the sole host for all the mineralization observed in the area.

In general, the sedimentary rocks occupy only a small percentage of the mapped area and are of very little importance in the overall geologic picture. Rock types vary from conglomerate to sandstones mixed with agglomerates.

Structurally, the area is marked by an extremely strong northwest trending, northeast dipping fault. This fault in general separates the intrusives and mineralized volcanics on the southwest from the unmineralized intrusives and sedimentary rocks on the northeast. In addition to this major structure, several near east-west trending, north dipping faults were also observed in the area.

#### Mineralization

Mineralization in the vicinity of the Austerlitz Mine is wholly contained within the Jurassic(?) Cobre Ridge tuff and is basically of two types; quartz veins and relatively thin silicified zones. Of the two types of mineral occurrence, the silicified zones have accounted for the majority of the district's production and offer the only real potential for an economically viable operation.

The silicified zones are quite variable in thickness, ranging from upwards of 40 feet to less than 5 feet, and appear to be either *roof* pendants engulfed in granodiorite porphyry or thin, gently dipping,



"stratabound" units contained within unmineralized and altered volcanics. Silicification within the volcanics appears to take the form of either intense silica flooding or micro-veining or both. In all cases, the silicified zones are found in close spatial relationship to the granodiorite-quartz monzonite porphyry dikes.

Locally within the silicified zones can be found areas of abundant pyrite or limonite. These areas in general were found to carry the highest gold and silver values and were locally observed to contain both chalcopyrite and galena.

As is evidenced by the included geological map, numerous areas of silica-pyrite-limonite were found throughout the area (Pl. 4). Of these numerous zones, only two were of sufficient size to be considered as possible targets. These two, the Switzerland and Ragnarok areas, constitute what was previously described as "stratabound" type mineralization.

The Switzerland area is located approximately 1000 feet south of the old Austerlitz Mine and comprises an area of approximately 600 feet x 100 feet in size (Pl. 2). This zone appears to be approximately 20 feet in thickness and is characterized as being a strongly silicified, locally pyritic-limonitic tablet adjacent to a granodiorite porphyry dike. This unit generally strikes N50W and dips at approximately  $10^{\circ}$  to the northeast.

The Ragnarok area is located about 1000 feet north of the old Austerlitz Mine and comprises an area of approximately 1000 feet by 500 feet in size (Pl. 3). The thickness of this zone varies from approximately 40 feet at its southern end to approximately 10 feet at its northern end. This zone, like the Switzerland zone, is characterized as being a strongly silicified, locally pyritic-limonitic tablet adjacent to a granodiorite porphyry dike. This unit generally strikes NNW and dips northeasterly at between  $10^{\circ}$  and  $30^{\circ}$ .

All other exposed mineralized zones were found to be either very small roof pendants in granodiorite porphyry or so obviously discontinuously mineralized "stratabound" units as to discount their importance.

#### Conclusions and Recommendations

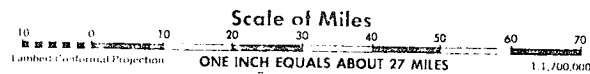
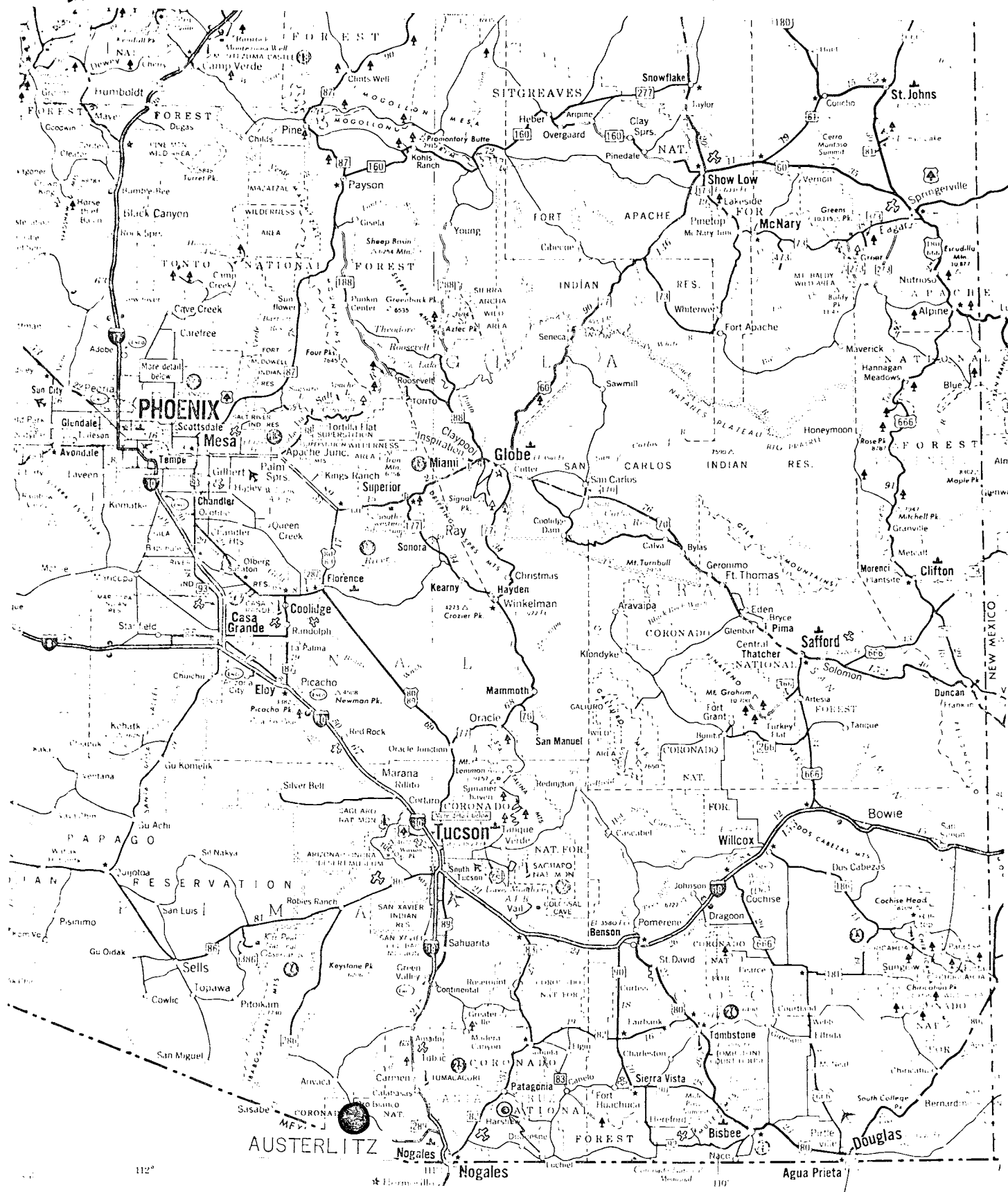
Following the initial stage of this investigation, it was concluded that only the Ragnarok and Switzerland areas offered the potential for finding a small open-pit gold-silver-(copper) deposit. All other zones were shown to be too limited in tonnage potential or too sporadically mineralized to be economically viable.

Subsequent work has shown that the combined tonnage potential of the Ragnorok-Switzerland areas is probably no more than 1.2 million tons. In addition to relatively small projected tonnages in these area, systematic sampling has indicated that mineralization is much too sporadic and low grade to be considered economic at this time (Pl. 2 & 3).

At no time during the project was any lead to blind mineralization observed and it must be concluded that none exist.

It is concluded that, although numerous, small, near ore grade zones of gold-silver-(copper) mineralization occur throughout the area, their occurrence is much too sporadic and discontinuous to warrant further work. It is recommended that no further work be done on this prospect and that the property option be terminated.

# LOCATION MAP OF AUSTERLITZ PROPERTY

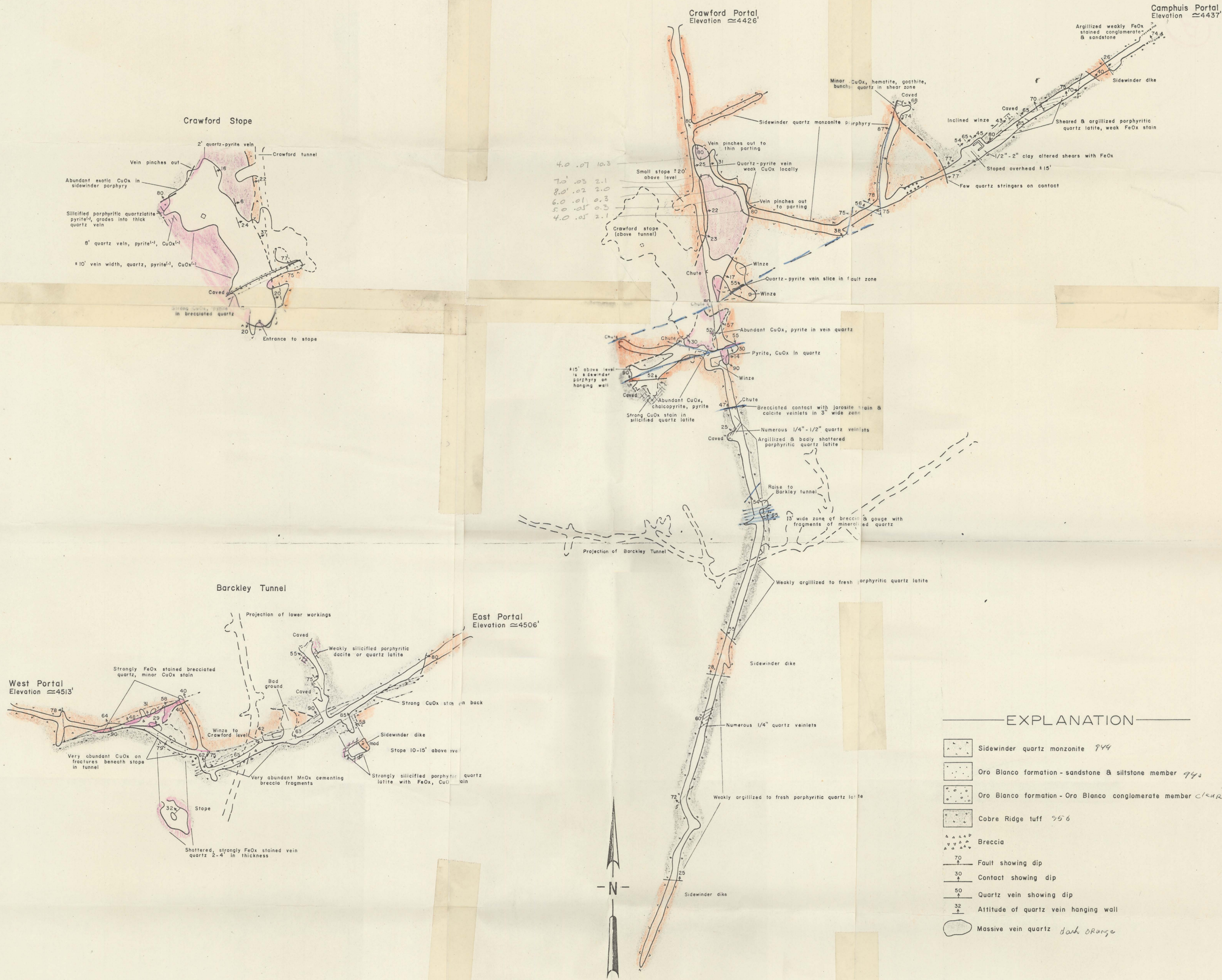


AUSTERLITZ PROPERTY  
 SANTA CRUZ CO., ARIZ.

**ESSEX**

ESSEX INTERNATIONAL INC.  
 100 WEST CANTON ST., TUCSON, ARIZONA 85701  
 PHONE (602) 624-7421





# GEOLOGIC MAP AUSTERLITZ MINE WORKINGS

APRIL 1969  
SCALE 1" = 50'

0 50 100 FEET



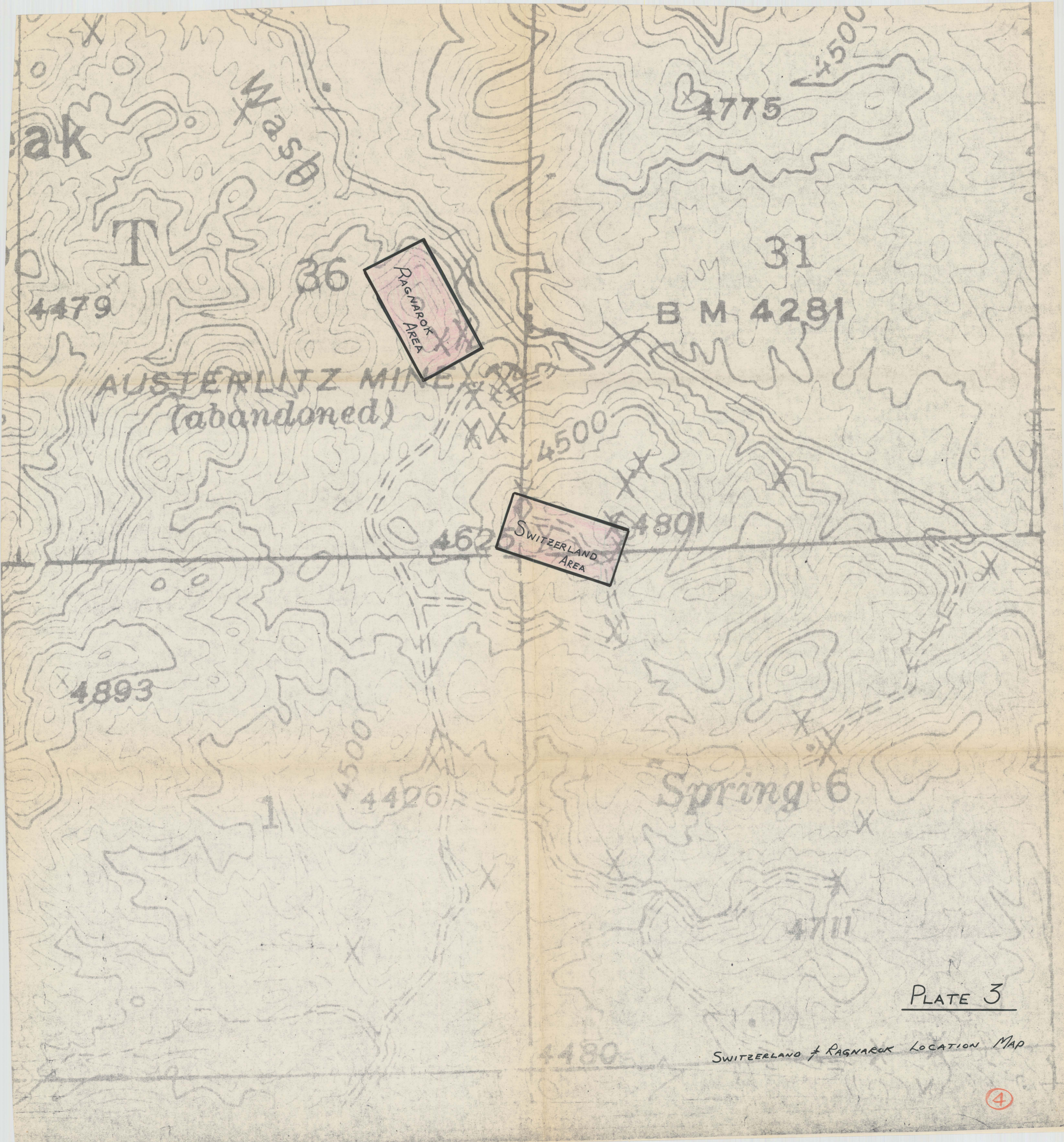


PLATE 3

SWITZERLAND & RAGNAROK LOCATION MAP