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SAFFORD - Graham Co. AZ.

Aug. 11, 1971 JKV

<p>1) Spec. <u>SAF-1</u> Properly lit and representative from E corner of section 32, overlain by gully N. dipping basal part.</p> <p>2) Photo # 1 Looking NE only across Butte Fault from road intersection in sec. 29 near E. edge of section.</p>		<p>6) Location monument Belknap # 2 10' S, 1450' N. of Belknap # 4, 1450' S, 10' N. Sec. 4, 3</p> <p>AT 3 465' E 226'</p>	<p>Section corner about 150' west of rock location</p>
<p>3) NW COR. Sec. 28, Spec. <u>SAF-2</u> gray caked fine-grained rock. See also photo # 2 looking eastward from west of road at Butte fault which strikes S-40°E, dips 45°SW. Photo # 3 <u>degr. cap</u> exposures of <u>at least 45' of intense red, Fe stained breccia</u> on Butte fault.</p>		<p>measurements. Two photos # 4 &amp; 1 (?) taken of splatified representative in west north of drum lined hole A-3. A series of holes all appear to be relative shallow (200'?) and drum lined holes</p>	<p>Spec. <u>SAF-5</u></p>
<p>4) Spec. <u>SAF-3</u> Gray calc. porphyry, med. chlor. -epidote alteration, taken from east of drill site in center of NW 1/4 sec. 28</p>		<p>7) Drill hole near center of sec. 3. Spec. <u>SAF-12</u> great of small pile of cuttings.</p> <p>8) Drill hole 1000' NW of NE COR SEC 3 appears to be shaly drum lined hole several drain parts ± 100' S. of drill hole SE COR P1 NE COR FOOTWALL # 45</p>	<p>Spec. <u>SAF-12</u></p>
<p>Spec. <u>SAF-4</u>, calc. -epidote alteration in <u>approximate</u> near Butte Fault south of drill site. Attention appears to be <u>weathering toward road</u> and lining of section 28.</p>		<p>9) Metal cap in scarp W.C. # 45-4-4632</p>	<p>Spec. <u>SAF-7</u> Gray altered outcrops from sec. 34</p>
<p>5) Large diameter (18"?) drill hole in NW cor. sec 29 has breast chips at collar. Southward from <u>Quintanilla hole</u> at SE cor. sec. 19 has chips of gray altered <u>amblyite (?)</u>, but no sulphides on pile of cuttings</p>		<p>10) Spec. <u>SAF-8</u> Similar to above but 1000 ft to Tra NE.</p>	<p>Spec. <u>SAF-8</u></p>
<p>Approx Road log</p> <p>0 SAF road</p> <p>4 1/2 Turn onto PD ROAD</p> <p>10 1/2 Turn off PD road onto No. portion of NAIR KEFS.</p>		<p>11) Spec. <u>SAF-9</u> weakly alt. amblyite?, 1000' east of stone specimen</p>	<p>Spec. <u>SAF-9</u></p>
		<p>12) Spec. <u>SAF-10A</u> Intensely <u>silicified</u> area several hundred feet in diameter. Fossils altered with massive</p>	<p>Spec. <u>SAF-10A</u></p>
	<p>13) Spec. <u>SAF-11</u> Chips of calc. from debris site in center of sec. 34 south of southeast plug(?)</p>	<p>Spec. <u>SAF-11</u></p>	<p>Spec. <u>SAF-11</u></p>
	<p>14) Spec. <u>SAF-6</u> south of windmill in sec. 34 gray alt. amblyite in NW of Butte fault</p>	<p>Spec. <u>SAF-6</u></p>	<p>Spec. <u>SAF-6</u></p>

SALT LAKE BLUE

84  
837  
98.7  
91.05  
6.25

SAFFORD - Graham Co., A2.

Aug. 12, 1971 JKsnes

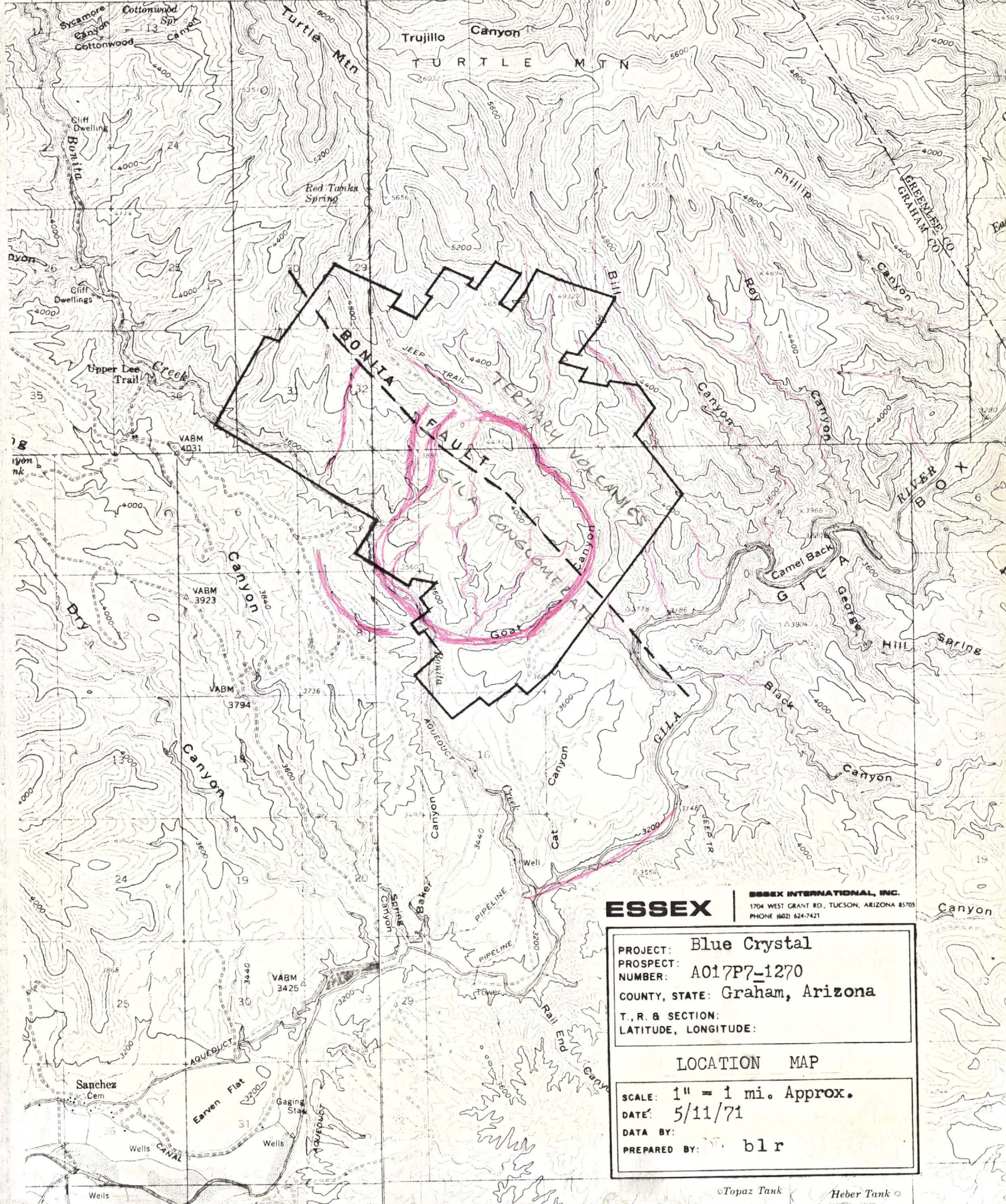
15)	Small spot sample of subplite bearing at head of rock from dump at windmill in south part of sec. 34	SAF 13				
16)	Spec SAF-14 Sericitized, divinate structure	SAF-15	Spec SAF-16	specimens from five grained beds	at head and back to near Sandstone Mine	
17)	4 or 5 specimens from small group in waste on N 1/2 of windmill in sec. 34	SAF-17				
18)	at head and back to near Sandstone Mine					





SAFFORD QUADRANGLE UNITED STATES  
 ARIZONA-GRAHAM CO. DEPARTMENT OF THE INTERIOR  
 15 MINUTE SERIES (TOPOGRAPHIC) GEOLOGICAL SURVEY

636 637 700 000 FEET 639 R. 28 E 109° 30' 641 000 m. E. 642 R. 28 E 644 645 646 647 25' 648



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

PROJECT: Blue Crystal  
 PROSPECT: A017P7-1270  
 NUMBER:  
 COUNTY, STATE: Graham, Arizona  
 T. R. & SECTION:  
 LATITUDE, LONGITUDE:

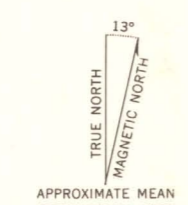
LOCATION MAP  
 SCALE: 1" = 1 mi. Approx.  
 DATE: 5/11/71  
 DATA BY:  
 PREPARED BY: blr



1:125,000



Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography by photogrammetric methods from aerial  
photographs taken 1959. Field checked 1962  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on Arizona coordinate system, east zone  
1000-meter Universal Transverse Mercator grid ticks,  
zone 12, shown in blue  
Where omitted, land lines have not been established



ROAD CLASSIFICATION  
Light duty ——— Unimproved dirt - - - - -

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

BRYCE MOUNTAIN, ARIZ.  
N3300—W10930/15  
1962







Safford Project

Verbal Mineralogical Report

by John M. Guilbert (7-8-75)

- (1) Zoning is emphatically present.

Mineralogic - assemblages well developed; classic associations, Fe - Mg - rich. e.g. Potassic assemblages = g - ki - k - poor, anhydrites - abundant.

- (2) Cryptic zoning is present.

*birefringence* →  
Within the levers of assemblage zonation is a second flight or second level of parameters - Fe/Mg in biotites, birefringence of sericites, Fe - Mg - Ca contents of carbonates, K/Na ratios in K - feld, etc. Can tell when you are in a zone.

- (3) Zone boundaries look more dome shaped than bullet shaped.

I would like to study and determine their physical location on about 50 thin sections already prepared. Helming's, PD's, KCC's X sections would develop the most information for least cost.

More thin sections from Hole 35, including skeleton core should be obtained.

Below listed T-Sections were used for this report:

PD Safford 3

Kennecott Safford 3125  
3820  
3900

Helming 42 57 50  
43 56 49  
44 13 51  
45 37 59  
46 40 61  
47 48 65-B

LGG - 1 Near Xmas Mines

" " " "



Safford Project (continued)

-2-

Safford #73  
75  
78  
79  
80-90  
92  
93  
93A  
94

B from PD Mines  
A-A

John M. Guilbert  
% Depto de Gologia  
Universidad de Chile  
Casilla 13518  
Santiago, Chile

*Geologia*



~~FAC~~

Suttons Project  
Verbal Mineralogical Report  
by John M. Gilbert 7-8-75

① Zoning is emphatically present <sup>developed</sup>  
• Mineralogic - assemblages well developed;  
classic associations, Fe-Mg rich.  
eg, potassic assembl. = q - bi - k - pa -  
anhydrite - ~~quite~~ abundant.

Refringences

② 'Cryptic' zoning is present  
within the levels of assemblage zonation  
as a 'second flight' or second level  
of parameters - Fe/Mg in biotites, bi-  
refringence of sericitites, Fe-Mg-Ca  
contents contents of carbonates, K/Na ratios  
in K-feld, etc. Can tell where you  
are in a zone.

domed shaped

③ Zone boundaries look more domed  
than ~~than~~ <sup>conical</sup> - bullet shaped.

I would like to study & determine their physical location

Need locations on about 50 ~~more~~ thin  
sections already prepared. Helming's,  
the PD's, KCC's, etc. for posting on X sects,  
Most info for least cost.

More T. Sects from Hole 35, <sup>including</sup> skeleton  
core, etc. should be obtained.



Below listed T-sections  
were used for this report

PD Safford - 3

Kennecott Safford - 3125

3820

3900

Helming # 42 57 50

43 56 48

44 13 51

45 37 59

46 40 61

47 48 65-B

LGG-1 Near Xmas Mine

"

Safford # 73

75

78

79

80-90

92

93

93A

94

B from PD Mine

A-A



John M. Gilbert

↳ Depto de Biología  
Universidad de Chile  
Casilla 13518  
Santiago, Chile

~~Home - Sede SAN NORO~~  
~~Sacramento~~  
~~U. of A.~~  
~~Bear Creek~~



PETROGRAPHIC DESCRIPTIONS

ESSEX' SAFFORD PROPERTY .



ES-5      3761'

Phenocrysts: (?)

Scattered crystals and fragments

Plagioclase: variably replaced by sericite, orthoclase,  
and epidote.

Mafic Phase: clots of chlorite, magnetite, rutile,  
orthoclase - some biotite

Quartz

Matrix:

"dirty" aggregate of plagioclase, quartz, chlorite,  
orthoclase, opaques (pyrite and magnetite), rutile

Veinlets:

1. Orthoclase-pyrite with sericite halos
2. Pyrite, sericite, orthoclase, calcite with sericite  
orthoclase halos - epidote
3. Calcite vltts

Alteration:

Chlorite-sericite-orthoclase



ES-5      3778'

Porphyritic andesite

contains xenolith of aphanitic andesite

Phenocrysts:      45-55%

Plagioclase:    euhedral laths weak-mod. dusting with  
sericite and orthoclase.

Mafic Phase:    Scattered irregular clots of chlorite-  
biotite-magnetite and pyrite - orthoclase  
and rutile.

Matrix:

V. fine mosaic of biotite flakes with plagioclase,  
orthoclase, chlorite, magnetite and pyrite.

Veinlets:

thin pyrite, chlorite, quartz, calcite, orthoclase  
sericite stringers

Alteration:

Biotite alteration



ES-5      4645'

Andesite porphyritic

Phenocrysts:                      35-40%

    Plagioclase: euhedral laths lightly dusted with sericite

Matrix:

    Fine mosaic of biotite, plagioclase, hornblende (?) and magnetite with clots of magnetite and of orthoclase and of anhydrite.

Veinlets:

    Thin quartz, anhydrite, chlorite, sulfide orthoclase vlt.

    Large veinlet (1 cm) quartz-pyrite-chlorite with moderate orthoclase flooding adjacent.

Alteration:

    Biotite alteration.



ES-5

4669'

Andesite - variably porphyritic on T.S. scale

Phenocrysts 35-50%

Plagioclase: euhedral laths 60-70% of phenos

Hornblende: sub-euhedral xtals 30-40% of phenos

Plagioclase lightly dusted with sericite

Hornblende essentially fresh.

Matrix:

Heterogeneous

small plagioclase and hornblende grains in very fine  
hornblende-biotite-magnetite; or plagioclase and horn-  
blende in fine granular magnetite matrix; scattered  
small orthoclase clots - biotite rich area appears  
to be local - fragment (?).

No veinlets in T.S.

Alteration: nil



ES-5

4673'

Andesite, sparsely porphyritic, scattered plagioclase phenocrysts and amphibole.

Matrix:

Strongly flow banded "trachytic" texture. Fine elongate plagioclase laths with interstitial hornblende, biotite, chlorite and magnetite - not significantly altered.

Veinlets:

Scattered "trails" of orthoclase with chlorite, magnetite rutile and pyrite.

Large vein on end of slide of pyrite, epidote, chlorite with a strong orthoclase halo with chlorite and epidote in halo.

Alteration:

Only minor pervasive alteration

Orthoclase-chlorite-epidote along veinlets.



ES-20

3600'

### Porphyritic Andesite

Phenocrysts: 25-30%

Plagioclase - euhedral to subhedral laths moderately to heavily dusted with sericite and minor orthoclase.

Mafic phase: irregular clots of chlorite, pyrite, rutile, epidote, calcite and orthoclase presumably replacing some mafic mineral.

### Matrix:

Very fine mosaic of biotite, chlorite, plagioclase and opaques with minor orthoclase and quartz.

Bio > Chl

Rock Bio  $\approx$  Chl

### Veinlets:

Chlorite-pyrite veinlets with minor quartz and epidote and distinct narrow haloes of orthoclase and/or sericite.

### Alteration:

Moderate biotite-chlorite alteration with weak orthoclase (except along vltts). Vltts are chlorite-orthoclase assemblage.



ES-20      3656'

Fragmental rock - irregular text. Rounded fragments of extremely fine grained material in coarser matrix.

Phenocrysts:                      10-15%

Crystals and fragments of plagioclase, replaced 90% by orthoclase, with scattered quartz and biotite pseudomorphs after mafic phase. Some phenos may have originally been orthoclase, but most orthoclase appears to be of replacement origin.

Matrix:

Fine mosaic of biotite and orthoclase with minor quartz, chlorite, magnetite and rutile.

Veinlets:

Thin "hairline" trails of orthoclase with minor quartz and lesser chalcopyrite, pyrite and chlorite.

Alteration:

Intense biotite-orthoclase alteration.



ES-20 5014'

Phenocrysts:

Crystals and fragments

Plagioclase: many quite fresh  
others extensively altered

Quartz

Mafic mineral (?):

Clots of chlorite, biotite, orthoclase,  
sericite, rutile, sulfides and quartz.  
Irregular outline.

Matrix:

Extremely fine mosaic of orthoclase, chlorite, sericite,  
biotite, quartz and opaques. Opaques dominate: magnetite  
and rutile with minor pyrite.

Veinlets:

Trails of orthoclase with accessory chlorite, quartz,  
sericite, and sulfides. Envelopes of strong orthoclase  
flooding. Molybdenite is chief sulfide. Trace epidote  
and calcite in veinlet.

Alteration:

Intense orthoclase-chlorite alteration.