

BIOLOGICAL  
MICROSCOPE  
LOGGING

~~Altered~~ <sup>mottled</sup> Andesite, lt. greenish-gray - to grayish-green, grayish-red & (scattered) greenish-yellow (epidote)

in 2% ~~fsp~~ obvious fsp. phenocrysts, a seemingly subhedral, up to 0.5 x 0.3 mm, poss. larger - ~~glassy~~ glassy-appearing to cloudy due to alteration.

~~the~~ bulk of rock has a ngranular app texture (grains < 0.02 mm), but with glassy-appearing pliq. microlites avg ln 0.2 x 0.05 mm.

rock has about 2% vesicle-fill vesicles shapes obscured by alth, but seemingly ~~equant~~ to (generally) ovoid to elongate-amoeboid.

typically < 1 mm. max. dim. but some fragmentary amygs. up to 5 x 1.5 mm

fill ~~DCA~~ is mostly EP >> Qtz > ch w/ possible KF and other unknown lt. gray transl. phases.

0.5 HM

2.5 EP

0.5 QZ

Tr epy

3640-50, continued.

Alt: <sup>crystal</sup> M-s, but with <sup>propylite</sup> plagioclase commonly

(95%) glassy appearing, either preserving original plag. rel. fresh (and/or) 2nd plag & ± Ksp after the original plag.

strong chltzn. of ground mass, w/ <sup>hem</sup> 2% obvious diss. epidote & wk scatter. hem grayish-red

(5%) of the chips are matte lt. grayish-green <sup>to greenish-white</sup> and apparently <sup>pinkish-gray</sup> have little or no relict plagioclase. These chips host the bulk of the obvious veins in the sample, and appear to consist mostly of chl, ser, qtz, hem, ep, and poss. Kfsp in various combinations.

obvious 0.5% VVF, mostly EP > qtz > chl > KF(?) and other lt. gray trans. phases = selvages merged around veins

1% discrete chips of the same 2nd minerals found in both veins and amygdaloids so which of these source the chips is unknown

3650-60': same as 3640-50', but much fresher - appearing. RX is med-alk, grnsh-gray lightly mottled w/ reddish gray to reddish-purple.

WV  
ALN

1 HM  
0.5 EP  
0.7 QTZ  
0.3 chalc.

1% of the vol. more altd ser-bearing frags. AA

1.5% ~~vol~~ amygdules  $\leq$  1 mm max dimension, mostly chl, qtz, chalc, ep in various combinations.

$\phi > \text{chalc} > \text{chl} > \text{EP}$  - prep minor add'l. transl. lt gray phases

3660-70' same as 3650-60'

3670-80':

~~Med. altd.~~ M-S altd. sparsely ppyte. andesite, AA <sup>otherwise</sup>  $\Delta \Delta \Delta$

rock is mottled lt. greenish-gray, lt. grayish-green, to grayish-red to grayish-maroon,  $\phi$  lt. grnsh-yellow (EP).

overall w. lt. grnsh-gray w/ a semi-translucent appearance (silicification?)

$\hookrightarrow$  5% of the chips are porcellaneous - appearing & may show a little salmon-white coloration - strong silicification  $\pm$  K spar flooding.

GM 3-17

3670-80 ft cont'd

1.5% vein fragments (discrete chips)

QTZ > EP >> py >>> epy



1/2 of these are ~~pure~~ quartz  
a third <sup>each</sup> with crystals <sup>post w/ other trans.</sup> white incls  
< 0.1 mm max dim.

Alteration: See above (and)

ranges from ~~tot~~ mod-propylitic  
to strong silicification (+ 2nd KF?)  
w/ most chips in halfway between  
the two extremes.

\* Fresh <sup>(?)</sup> plagioclase remains in all  
but the most silicified chips.

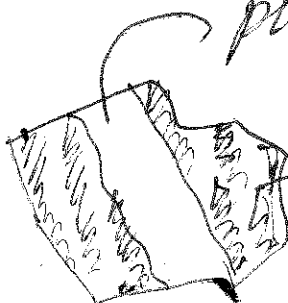
0.3% diss < 0.1 mm, pyrite

Interp.

Propylitized rock vained  
w/ qtz & silicified outward from  
qtz veinlets

3680-90'

2 QTZ  
2 EP  
V  
V  
V



pure "bull" qtz

0.5% diss, pyrite

banded bull qtz + epidote

4VVF

otherwise same as above with  
more silicification.

3690-3700: same as 3670-80' <sup>80 90</sup>  
exc. less qtz euhedra  
& presence of euhedra  
of epidote & an unknown  
~~mineral~~ 1.5 mm. aggregate  
of 0.2 to mm blocks  
(anhydrite)?

~~36~~ 3700-3710: same as 3670-80' Tr. py  
0.5 EP

3710-20' " 0.5 VVF  
Tr py  
0.3 qtz

3720-30'

Ⓐ 15% ~~of~~ andesite, ~~##~~ dense; med. gray  
abund. fresh plagioclase. sl. purplish

17% intensely altered scoria, mottled  
buff-white, greenish-white, let. reddish-  
gray (minor) & greenish-yellow → overall  
aspect buff-white — contains 20-50%  
vesicles and amygdules, round to ovoid to  
amoeboid, up to 1.5 mm, usu. < 0.5 mm.  
many filled w/ rel. pure epidote — many  
others lined w/ delicate ~~pr~~ inward-  
pointing epidote prisms up to 0.15 x 0.02 mm  
also minor chlorite & other, besides qtz,  
transl. white phases.

3720-30, cont'd

GM 31-17

ⓑ 20% andesite, same as 3670-80'

40% altered tuff, same as scoria, but just a few scd. vesicles and amygdules.

15% WF - mostly Qtz and prob. other white transp. phases, minor epidote & py. (clastic): ~~most~~ a few of the Qtz frags. have one side faced w/  $\leq 0.3$  mm euh. xls (Qtz + ?)

Altn ~~no~~ andesite - see above

scoria and tuff - complete !!

a punky to porcellanous aggregate of ~~Qtz~~ sericite, chlorite, quartz, epidote, pyrite & poss. KFSP  
minor hem.

andesite - (A) nearly fresh 17%

(B) ranges from strong altn similar to that affecting tuff & scoria to mod - ~~total~~ vs. silicification (3%)

1% py  
13% ep  
0.5% hem

GM 31-17

~~2720-30 cont'd.~~

less HM

3730-40' 25% "fresh" andesite.

45% strongly altd. andesite AA

7 EP  
1 py (diss.)  
0.1 HM

3% "scoria" AA int. altd. yellow amygs.

22 VVF AA

25 "tuff" int. altd. AA (could also be ~~alt~~ VVS altd. andesite)

a few discrete "bull" Qtz. vein chips up to 1.5 mm. wide

3740-50'

same as Above

"tuff" probably andesite

1.5 diss HM  
5 EP  
0.13 HM

3750-60

1st abundant scoria

5% ~~altered~~ wk-mod. altd. andesite AA

30% strongly altd. andesite AA

3% WF  $\phi \cong EP \rightarrow$  unknown white > chl

20% scoria, int. altd. AA, but w/ abundant, soley chlorite-filled amygdules (also ep. amygs) & delicate ep.-drusy-lined vesicles

4% ~~to~~ hste.  $\phi$  tuff int. altd. AA.