

Neals-Bully Creek  
Petrographic Descriptions

J. S. Getsinger  
March 21, 1979

will /  
OK /  
175 730 2  
1979

NBC 5-1-78

60-240': Porphyritic basalt.  
Small phenocrysts:  
plagioclase: labradorite - bytownite (?) 15%  
clinopyroxene Low +2V (augite?) 5-10%  
olivine, some replaced 5-10%  
  
opaques 10%  
pyroxenes, small 15%  
plagioclase 30%

Comments: One pyroxene had a high +2V = 70° or so, (?).  
This description matches Christiansen's well.  
However, this basalt is not like that in any  
of the sections made from hand samples.

320-240': See Christiansen's description. The basalt appears to be  
the same as that in the overlying unit. There is also a  
fragment of black vitrophyre, separate from the cemented  
sediment that contains basalt fragments.

560-620': Sediments. Some quartz grains. Looks like siltstone.  
Some has a lot of holes in it.  
I have no background in sed. pet., can't interpret these  
rocks.

NBC 5-1-78

- 1520-1580' A: (a) 1 black chip: (?)  
(b) 5 buff-colored chips: siltstones  
(c) 2 brownish chips: vitrophyre  
(d) 6 dark brown chips: tuffaceous (?) sediment (?)
- (a) Black-looking chip with very strong reddish-brown absorption, visible only on thin edges, and nearly opaque otherwise.
- (b) Three chips are an extremely fine-grained sediment with thin opaque stringers. Layering is indistinct but defined by wisps of oxidized material. The rock is buff to pale brown in plane light, with low birefringence (grays) under crossed polars. Two chips are darker, fine-grained sediment, probably siltstone. More opaques and more oxidized (reddish) areas are present.
- (c) Two chips of vitrophyre: splotchy, light reddish-brown glass (?) with tiny clear microlites and a few phenocrysts (plagioclase, pyroxene, blocky opaques). Spherulites with brown to orange concentric layers have developed in a few places, indicating beginning devitrification.
- (d) Dark brown chips: (?)  
The dark brown/reddish-brown material is non-crystalline, and extinct under crossed polars; it might be glass. Some of these chips exhibit a crude foliation, with some flattened features visible. One mineral grain, showing strain (mottled, irregular extinction), was identified as apatite (uniaxial negative, low birefringence, length fast). Chips are relatively consistently reddish-brown. I can't tell much about the texture, composition, or rock types.

Neals-Bully Creek  
Petrographic Descriptions

J. S. Getsinger  
March 21, 1979

NBC 5-1-78

- 1520-1580' B: (a) 15 chips of vitrophyre  
(b) 5 chips of aphanitic basalt  
(c) 1 chip of the basalt with the small phenocrysts
- (a) Vitrophyre: light brown glass with phenocrysts and spherulites.  
Phenocrysts: plagioclase -- calcic andesine-labradorite  
clinopyroxene  
blocky opaques  
Accessory: apatite
- (b) Fine-grained, felty basalt similar to sample #11.
- (c) Basalt with small, abundant phenocrysts, and a groundmass slightly smaller grained than that in (b). The basalt is similar to that in interval (60-240'), but lacking obvious olivine. This is similar to basalt seen in hole 2-Rd-77.