

TITLE: Cataclastic Degradation of Intrusion Breccia near Marathon

LOCATION: SW 1/4, NW 1/4, Sec. 18, T 28 N, R 6 E, Marathon 15' quadrangle



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#### SUMMARY OF FEATURES:

Strongly chloritized quartz syenite(?) or adamellite(?) aplite containing large, rounded tonalite xenoliths shows progressive development of cataclastic schistosity and xenolith flattening southward across the roadcut. The tonalite xenoliths are medium gray, whereas the aplite is pink. With increasing cataclasis, the tonalite becomes pale yellow-green owing to the presence of chlorite and epidote. The xenoliths are reduced to less than one-tenth their original thickness in the steeply dipping, northeast-trending shear zones. Xenolith elongation is consistently 15 to 20° more northerly in strike than schistosity, and have a southeasterly dip of 60 to 70°. If xenoliths were elongated parallel to the original (prekinematic) intrusive contact, the shear zone cut the N20°E(?) contact along a more easterly trend. Although interlensing, chlorite-rich surfaces appear to be "slip planes", very little slippage can be seen where these surfaces cross xenolith boundaries.

Pegmatite-filled gash fractures trending N55°E, 30°(+ 10°) SE have 1-3 cm masses of chlorite and actinolite. Quartz also fills gash fractures in relatively unshered aplite.

The tonalite xenoliths are composed of radial aggregates of plagioclase with 15-20% quartz. Primary mafic minerals are thoroughly altered to epidote and green chlorite. Plagioclase is strongly sericitized. The radial aggregation of primary plagioclase in the tonalites suggests cumulate texture.

The chief purpose of examining this outcrop is to demonstrate the affect of primary composition on the color and fabric of cataclastic rocks. Primary features are totally obliterated, and transposed into the plane of cataclastic schistosity.