

GOSSAN #1  
(M. Waldner)

Introduction

The alteration zone is located in a deep-cut creek valley southeast of Stokes Lake, airphoto number A12232-207 - on the Tay River map sheet. A magnetic anomaly is present over this region. There is considerable reddish (limonitic or iron) staining and a yellowish-white alteration product. Two soil sample lines were run in the area; one trending 055° and another running 145°. Each line is 2000 ft. long and samples were taken at 100 ft. intervals with sample #1 0+00 located near the north-central part of the alteration zone. The soil sample lines were arranged in the form of a cross, each arm being 1000 ft. long and intersecting at sample position #1 0+00. A silt sample flag designated JA-69-22 was found on the creek near soil sample location #1 8+00SE. Another silt sample, number JA-69-19, was found on the same creek in another region of red (iron?) staining.

General Geology

The rock in the alteration zone consists of three main types. The most highly stained and altered rock is a chert-quartz pebble conglomerate. The conglomerate is medium grey with light grey quartz grains and chert grains which tend to be black. In places the outcrop approaches a chert cobble conglomerate with some of the chert grains up to 3 inches in length. The conglomerate is stained red and there is also a yellowish-white alteration product on the chert-quartz pebble conglomerate. The grains are medium to coarse in size and rounded to sub-rounded.

Interbedded with the conglomerate is a very fine grained dark grey to black quartzite. In some of the quartzite outcrops small square vesicles are present presumably due to the weathering of pyrite crystals. Pyrite is evident in the quartzite in limited amounts (generally < 10%). The beds are approximately 3 to 6 inches thick in the quartzite whereas the chert-quartz pebble conglomerate appears to be thicker bedded (> 10 ft.) although no bedding foliation was observed in the conglomerate. The quartzite is generally not stained although some minor pyritic staining is present on the weathered surfaces.

Also present is thin (approximately < 2 inches thick) beds of black graphitic argillite. The weathered surface sometimes exhibits a whitish weathering product which does not react to 10% HCl. Upstream from the alteration zone, the argillite grades into a graphitic shale. Slaty cleavage is very poorly developed here. On Gossan #1 no slaty cleavage, whatsoever, was observed in the graphitic argillite.

### Mineralogy

The only sulphide mineralization observed was in the form of small, well developed pyrite crystals. The pyrite occurs as a minor constituent in the quartzite and to even a lesser degree in the graphitic argillite. The most pyritic unit is the chert-quartz pebble conglomerate. The stream which cuts the alteration zone has silt samples high in lead, but no lead or commonly associated mineralization was observed.

### Structural Geology

Bedding attitudes on the alteration zone strike  $126^{\circ}$  and dip  $36^{\circ}$  NE. No folding was observed but folding is indicated by the bedding attitudes which vary a great deal about 1000 ft. upstream. Here the bedding strikes  $091^{\circ}$  and dips  $68^{\circ}$  S. The bedding suggests folding although no folds or possible fold axis lineations were observed.

### Conclusions

The alteration zone appears to be due to weathering of pyrite although nothing definite can be ascertained until soil sample results are known. Possibly some trace lead mineralization is present (indicated by the high lead values in the silt samples taken in June of 1969).