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GEOLOGY

TOOBALLY LAKE AREA

YUKON TERRITORY

ATLAS EXPLORATION LIMITED

-by-

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SUMMARY

The Toobally Lakes area is near the western boundary of the Eastern Cordillera. Formations of the cordillera are largely Palaeozoic (commonly thought of for oil) and have a regular northerly trend. Within the area, clastic sediments have greenstones interspersed, minor faults conform to a wrench fault system, and major faults appear to be at random.

The known mineralisation appears to be connected with the minor system: although ore bodies may be rich they are not likely to be large. Airborne geophysics and stream sediment sampling should be used for exploration.

## INTRODUCTION

The Toobally Lake area is one of several selected for exploration by Atlas. The present photogeologic study is based on unpublished mapping by Gordon Davies.

### The area, location and access

The area lies across Beaver River, one of the main tributaries of the Liard, at the north end of Toobally Lakes, near where the Hyland and Liard plateaux come together. The coordinates are Lat.  $60^{\circ} 30' N.$ , Long.  $126^{\circ} 15' W.$  Watson Lake, near mile 630 on the Alaska Highway, is 90 miles to the west-southwest.

### Previous work

There is no published map of the area, but the Trout River sheet (G.S.C. paper 58-11) terminates at the  $120^{\circ}$  line, a couple of miles to the east. Gordon Davies private 1963 map 'Gusty Lakes-Beaver River area', in company records, includes the area.

## GENERAL GEOLOGY

The Toobally Lakes area is within the eastern cordillera near its west boundary, and although intrusives outcrop about 10 miles east of Toobally Lakes (see Gordon Davies map), the formations within the area trend regularly north-south, comparing closely with the oil-bearing Palaeozoics in the

Trout River map area immediately to the east. The area is therefore considered off the northwest trending system of crystalline and stratified belts of the southwestern Yukon.

#### LOCAL GEOLOGY

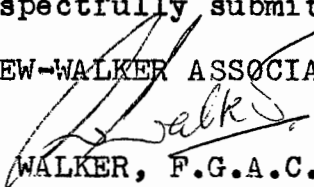
Gordon Davies has mapped clastic sediments, principally "quartzite, quartz pebble conglomerate" in the area. About 4 miles to the south an east-west creek gives an excellent cross-section, and several greenstone and shale bands also appear. The beds trend northerly, most dips are moderate to the west except where faults may have affected them, and the minor faulting for the most part exhibits a typical wrench fault pattern: E.N.E. right hand, E.S.E. left hand, E-W tension faults, N-S strike faults. The pattern of major faults is more random and not understood.

#### ECONOMIC GEOLOGY

The known mineralisation is associated with minor faults which may be compared in structural environment with the copper and silver deposits of Elk Lake and Gowganda. In such environments, although deposits may be rich they are unlikely to be large.

Both airborne geophysics and stream sediment

sampling are valid exploration techniques for such deposits.

Respectfully submitted,  
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