Executive Summary

The proposed Snafu/Tarfu Special Management Area (SMA) consists of 733 km^2 in southern Yukon on NTS 105C/3, 4, 5 and extreme eastern edge of 105D/8. The Snafu and Tarfu Lakes area was selected as a SMA by the Carcross/Tagish First Nation, with the current proposal designating the area as a Natural Environment Park with no up-front mineral withdrawal upon signing the Final Agreement.

In 2001, the Yukon Department of Economic Development carried out a regional mineral assessment, which reviewed the geologic data for SW Yukon and ranked the (~1000 km² sized) tracts. Part of this regional assessment covered the proposed SMA area, and the relevant tracts were ranked either moderate or lowest relative regional mineral potential with respect to phase IV (SW Yukon) of the Yukon regional mineral potential map.

The proposed Snafu/Tarfu SMA lies within Cache Creek Terrane and is composed of a complex succession of Mississippian to Permian basalt, shallow water carbonates, chert and greywacke, overlain by Triassic to early Jurassic interbedded chert and greywacke. The area is lacking detailed geological bedrock mapping and structures within the proposed SMA area are poorly constrained.

Prior to fieldwork a compilation and study of available data identified a total of ten targets for follow-up of which all but two were examined in 2002. Targets selected were anomalous Geological Survey of Canada regional geochemical survey samples, aeromagnetic features, and geological structures. An attempt was made to locate and investigate all of the reported Yukon mineral (Minfile) occurrences within the proposed SMA boundary. A total of 12 person days were spent investigating the selected targets. Fieldwork entailed the collection of rock, soil and stream sediment samples, in conjunction with geological mapping and prospecting and examination of the mineral occurrences within the area.

In December 2002, the Yukon Department of Energy Mines and Resources carried out a detailed mineral assessment, which reviewed the geologic data for the proposed SMA and surrounding area (the mineral assessment study area), and an expert panel of industry geologists, consensus ranked the resulting eight tracts. The east-central portion of the mineral assessment study area, and the extreme southwestern corner of the proposed SMA ranked the highest relative mineral potential. Anomalous geochemistry and unexplained geophysical signatures within the area currently mapped as Triassic ribbon chert/greywacke, led to the area being ranked relatively highest. A mapped intrusive body (of the same suit as those located in the Atlin area) on the southwest side of the proposed SMA ranked also ranked relatively highest.

It is recommended that land use planners (including SMA steering committee members) take into account the results of the mineral assessment of the proposed Snafu/Tarfu SMA and use the mineral potential maps in their planning. Ideally, land use planners would avoid alienating tracts of highest mineral potential from exploration and future development.

The following additional research is recommended to better constrain the mineral deposit types applicable to the proposed Snafu/Tarfu SMA, follow-up unexplained geochemical anomalies and previously identified targets, further work on the known mineral occurrences, and additional geological mapping in tracts that ranked the highest to identify unmapped units and increase the understanding of the structural history of this belt of rocks.

Snafu/Tarfu SMA

Field observations by FJA
November 5, 2002

Soil samples	97627-628
Silt samples	97625, 97628-632
Rock samples	97624 hematite stained limestone bed
	97626 orange/yellow oxide stained ash-tuff outcrop

Geology noted comprises chert, greywacke, limestone and a minor ash-tuff bed within limestone. No alteration or mineralization seen.

Target #5,

soil sample #56371(RH) from hem stained lst breccia anomalous in Cu, As, Sb, Zn. Ubiquitous limestone unit with rare tuff beds. Possible fault underlying the gully that RH traverses down.

Target #3

soil sample #97628 with highest gold (12.4ppb) was collected from a gullied depression caused by an intermittent stream, proximal to greywacke outcrop. RH traversed the stream to the north. One silt (56375) carried elevated As and W. Geology is ash-tuff capping calcareous greywacke. Possible VMS affinity?

To Nov. 5/02

Total # soils 11

silts 17

rocks 14

42 samples.

Snafu/Tarfu SMA

Field observations by FJA
November 5, 2002

Soil samples	97627-628
Silt samples	97625, 97628-632
Rock samples	97624 hematite stained limestone bed
	97626 orange/yellow oxide stained ash-tuff outcrop

No great revelations about geology. Chert, ribon chert, siltstone, limestone and pyroclastic noted. No alteration/mineralization seen.

Target #5, soil sample 56571(RH) from hem stained lst breccia anomalous in Cu, As, Sb, Zn. Large limestone unit. Possible sedimentary copper setting? ~2m wide dyke, bed.

Target #3, soil sample #97628 with highest gold (12.4ppb) was collected from a gullied depression caused b y intermittent stream, proximal to tuff/volcanic outcrop. Other silts from this stream (97530-632) are always plotting in the upper percentiles for economic elements. RH traversed stream to the north. One silt (56375) carried elevated As and W. Geology is ash-tuff capping calcareous greywacke. Possible VMS affinity?