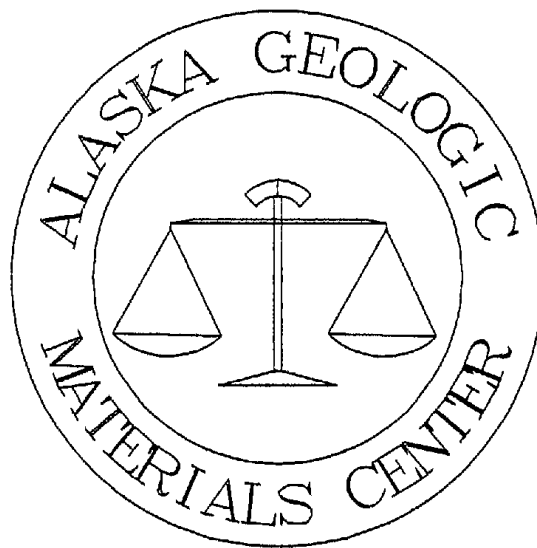


X-ray fluorescence trace element data of the U. S. Bureau of Mines Idaho Gulch (Tofty tin belt) core of Central Alaska.



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MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

TO: John Reeder
Curator
Geologic Materials Center

DATE: February 5, 1996

FILE NO:

TELEPHONE NO: 451-5000

FROM: Karen H. Clautice *KHC*
Geologist

SUBJECT: Analyses of Tofty core

Below are analyses made by Rainer Newberry, UAF, of splits we took from drill core from the Geologic Materials Center last spring. I have added brief sample descriptions.

The core came from wooden boxes labeled "Idaho Gulch" and "Tofty." It is my understanding that this core was collected by the U.S. Bureau of Mines in 1956 during a study of the Tofty tin belt, approximately 15 km northwest of Manley. The only published USBM data I can find from that era is churn drill data from placer deposits (Thomas, 1957). In the 1980's, the USBM did additional work in the Tofty area, logged 1956 core and published geologic cross sections constructed from the drill core data (Warner and others, 1986). The core I sampled was part of this study, I believe. But I was not able to entirely correlate the diamond drill hole numbers and footage found on the wooden core boxes to the footage descriptions and hole numbers in the 1986 report. The below listed samples are labeled as I found them in the wooden boxes at the GMC. I suggest anyone interested in the results read the report, look at the core and make their own interpretations as to location.

Warner and others, 1986, suggest the presence of a carbonatite, an uncommon carbonate intrusive rock, in the Tofty area. Based on the theses analytical results, Newberry concurs. The highest niobium values come from a rock that looks like a sample from the carbonatite at Magnet Cove, Arkansas.

These samples are within the area of the geophysical surveys to be released this month. We will have a field mapping crew doing follow-up work to the surveys this summer in the Tanana B-1 Quadrangle, northeast of the Tofty area headed by Rocky Reifentstahl.

Trace element analyses were performed by Rainer J. Newberry in the University of Alaska X-ray fluorescence spectrometer laboratory. Approximately 7 g of minus-200-mesh sample material was pressed into flat disks for analysis by a Rigaku® wave-length-dispersive X-ray spectrometer using procedures developed by the Alaska Division of Geological and Geophysical Surveys for data acquisition and correction. Three analyses of each pressed-powder disk were conducted and estimated errors due to counting statistics are noted in the column headings.

Drill Hole	Interval	NB ±2 ppm	RB ±3 ppm	SR ±5 ppm	Y ±2 ppm	ZR ±10 ppm	BI ±1 ppm	MO ±1 ppm	SB ±1 ppm	SN ±1 ppm	W ±1 ppm	GA ±1 ppm	NI ±3 ppm	PB ±5 ppm	TH ±2 ppm	ZN ±3 ppm
DDH 3	5'	183	34	38	4	37	0	6	6	4	0	11	3416	33	56	638
DDH 3	29.8'	5	1	29	1	8	1	1	4	0	0	19	1201	3	2	81
DDH 3	46'	100	2	37	34	266	1	5	0	1	0	26	20	11	6	142
DDH 8	200'	64	0	1975	39	250	0	6	0	0	0	2	53	0	0	41
DDH 10	45.7'	194	0	7245	30	247	0	6	0	0	2	1	38	0	0	32
DDH 12	204.7'	542	0	3411	24	281	0	7	0	0	0	2	39	0	0	33

DDH 3 5' magnetite-bearing limonite
 DDH 3 29.8' gray-green phyllite
 DDH 3 46' tan, fine-grained carbonate with 2mm wide dark red-brown and orange limonite veinlets
 DDH 8 200' magnetite to 1 cm across in light orange-tan, fine-grained carbonate
 DDH 10 45.7' magnetite-bearing, white medium-grained carbonate with quartz veins
 DDH 12 204.7' magnetite-bearing, white medium-grained carbonate

Note: All samples described as 'carbonate' behave like a dolomite with HCl, effervescing only after being scratched

Thomas, Bruce, Tin-bearing placer deposits near Tofty, Hot Springs District, Central Alaska: U.S. Bureau of Miners RI 5373, 56 p.

Warner, J. Dean, Mardock, C.L., and Dahlin, D.C., 1986, A columbium-bearing regolith on upper Idaho Gulch, near Tofty, Alaska: U.S. Bureau of Mines IC 9105, 29 p.

cc: Rainer Newberry, UAF
 Milt Wiltse, DGGS
 Rocky Reifentstuhl, DGGS