UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

GEOCHEMICAL DATA FROM THE NABESNA B-4 QUADRANGLE, ALASKA

By

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Open-file report

1969

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

MAP EXPLANATION

Nabesna B-4 quadrangle,
Alaska

Stream sediment sample
and number
Solid circle indicates presence of anomalous elements. Anomalous elements and their concentration (in ppm) shown. See Table 1 for additional analytical data.

Rock sample and number
See Table 2 for sample description and analytical data.

Altered areas
Conspicuous limonite-staining due principally to weathering of disseminated sulfides in bedrock.

X

Known copper mineral occurrences in amygdaloidal basalt unit.

TABLE 1

Analyses of stream sediments
Nabesna (B-4) quadrangle, Alaska

L, detected, but below limit of determination. N, not detected.
Limit of determination shown in parentheses under element.

	Concentration (ppm)										
Sample No.	Au (0.02)	Ag (0.5)	B (10)	Cr (5)	Cu (2)	Mo (2)	Ni (2)	Pb (10)	Sc (5)	V (5)	Zn (200)
AGG 009	L	1.5	20	200	100	N	70	10	50	300	L
AGG 012	L	N	30	150	100	N	70	10	30	200	L
AGG 013	L	N	50	150	100	N	70	L	30	200	N
AGG 014	L	N	100	150	150	N	100	10	30	300	L
AGG 015	L*	N	L	150	70	N	70	L	50	300	L
AGG 016	L*	N	L	300	100	N	70	L	30	300	L
AGG 017	L	N	L	200	70	N	70	L	30	200	N
AGG 018	L	N	15	700	100	N	70	L	50	300	L
AGG 019	L	N	30	500	150	N	100	L	50	300	L
AGG 022	L	N	70	150	70	N	70	10	30	300	N
AGG 023	L	N	100	150	150	N	70	10	30	300	L
AGG 024	L	N	30	500	70	N	150	L	30	200	N
AGG 025	L	L	20	L	150	N	150	L	30	200	N
AGG 030	L	L	30	500	150	N	70	10	30	300	L
AGG 031	L	L	70	10	100	N	100	10	30	200	L
AGG 033	L	N	50	500	70	N	70	L	20	200	N
AGG 034	L	L	150	150	150	L	150	20	30	300	L
AGG 035	L	L	50	150	100	N	70	20	30	300	L
AGG 036	L	L	L	700	150	4	70	15	20	300	L
AGG 037	L	L	100	700	100	N	150	10	30	150	L
AGG 038	L	L	30	300	100	N	150	L	30	300	L
AGG 039	L	L	30	150	70	N	70	L	30	300	N
AGG 040	L	N	30	150	70	N	70	10	50	300	L
AGG 041	L	N	70	300	70	N	70	15	30	300	L
AGG 042	L	N	30	150	150	N	70	15	30	300	L
AGG 043	L	N	10	500	100	N	70	10	30	200	L
AGG 044	L	N	15	150	150	N	100	10	30	300	N
AGG 045	L	N	L	30	50	N	50	10	20	150	N
AGG 046	L	N	L	50	70	N	10	10	7	70	N
AGG 047	L	N	L	100	70	N	50	L	15	70	N
AGG 048	L	N	10	150	70	L	70	L	20	300	N
AGG 049	L	N	15	20	15	N	7	10	15	100	N
AGG 050	L	N	20	200	70	N	70	15	30	200	N
AGG 071	L	N	L	150	70	N	70	10	30	200	N
AGG 096	L	N	15	300	70	L	100	N	100	500	N

TABLE 1,cont.

Sample No.	Concentration (ppm)										
	Au (0.02)	Ag (0.5)	B (10)	Cr (5)	Cu (2)	Mo (2)	Ni (2)	Pb (10)	Sc (5)	V (5)	Zn (200)
AGG 097	L	N	15	200	70	L	70	10	100	700	L
AGG 100	L	N	15	300	70	N	150	15	50	500	N
AGG 101	L	N	20	300	70	N	70	15	50	500	N
AGG 119	L	N	N	30	20	N	10	N	15	100	N
AGG 120	L	N	10	70	50	N	30	L	20	150	L
AGG 121	L	N	N	15	70	N	15	L	15	100	N
AGG 122	L	N	N	15	70	N	20	L	20	100	N
AGG 123	L	N	N	50	100	N	30	15	20	100	N
AGG 124	L	N	20	L	70	N	15	L	20	100	N
AGG 125	L	N	20	70	70	N	20	L	30	200	N
AGG 126	L	N	20	20	50	N	15	20	20	100	N
AGG 127	L	N	15	20	50	N	7	10	7	50	N
AGG 128	L	.5	30	30	200	N	10	20	30	200	N
AGG 129	L	N	30	30	100	20	15	N	20	150	N
AGG 130	L	N	50	10	100	N	15	20	20	100	N
AGG 131	L	.7	30	15	50	N	15	10	15	100	N
AGG 132	L	N	10	150	100	N	50	10	15	150	N
AGG 160	L	N	10	70	200	N	30	30	50	500	N
AGG 163	L	N	10	150	200	N	200	50	50	500	N
AGG 164	L	N	100	100	70	N	30	10	30	500	N
AGG 165	L	N	300	100	100	N	30	15	30	500	N
AGG 166	L	N	20	300	200	N	150	N	100	700	N
AGG 167	L	N	100	150	70	N	100	15	70	700	N
AGG 168	L	N	100	150	100	N	100	15	50	700	N
AGG 169	L	N	200	200	150	N	150	L	100	1000	N
AGG 170	L	N	100	100	70	N	30	N	100	1000	N
AGG 171	L	N	10	70	150	L	50	10	15	150	200
AGG 172	L	N	15	150	150	L	50	15	20	150	L
AGG 173	L	N	L	100	20	N	50	10	15	150	L
AGG 220	L	N	L	70	50	N	30	L	30	150	N
AGG 222	L	1	L	100	70	N	70	L	30	150	N
AGG 223	L	N	150	500	150	L	150	L	50	200	L
AGG 230	L	N	50	150	150	N	100	10	20	300	N
AGG 231	L	N	50	150	150	L	100	15	30	300	N
AGG 232	L	.7	15	300	70	N	70	10	20	200	N
AGG 233	---	N	30	700	100	N	300	L	30	200	N
AGG 234	L	N	15	200	100	L	70	15	30	300	N
AGG 235	L	N	30	150	50	L	70	10	30	150	L
AGG 236	L	N	20	200	70	L	100	10	30	200	L
AGG 237	L	N	20	150	70	L	70	15	30	200	L

TABLE 1, cont.

Sample No.	Concentration (ppm) Au (0.02)	Ag (0.5)	B (10)	Cr (5)	Cu (2)	Mo (2)	Ni (2)	Pb (10)	Sc (5)	V (5)	Zn (200)
AGG 238	L	N	20	150	50	L	100	15	20	200	L
AGG 239	L	N	30	500	50	L	100	L	30	150	L
AGG 240	L	L	30	300	100	L	100	L	30	150	L
AGG 241	L	N	30	150	100	L	70	10	20	150	L
AGG 242	L	N	30	150	50	L	50	L	15	150	L
AGG 243	L	L	30	200	70	5	70	L	20	150	L
AGG 244	L	.5	70	200	150	5	100	L	30	200	L
AGG 245	L	N	15	30	20	N	20	L	20	150	L
AGG 246	L	N	10	30	5	N	20	L	10	150	N
AGG 247	L	N	10	70	50	L	30	L	20	150	L
AGG 248	L	N	20	50	100	L	15	L	15	100	N
AGG 249	L	L	20	150	100	5	70	10	15	100	L
AGG 250	L	N	50	500	150	L	70	L	30	150	L
AGG 251	L	N	30	200	70	N	70	10	20	150	L
AGG 252	L	L	10	150	150	L	50	10	20	150	L
AGG 253	L	N	15	200	300	7	150	L	50	300	N
AGG 254	L	N	10	50	15	N	20	L	50	200	N
AGG 255	L	N	10	30	20	N	20	10	10	150	N
AGG 256	L	N	10	30	10	N	10	L	15	150	N
AGG 281	L	N	L	70	200	N	200	N	70	500	N

*Sample AGG 015, limit of determination 0.1 ppm and sample AGG 016, limit of determination 0.04 ppm.

Gold by atomic absorption. Analysts: Meier, A., Miller, R., Tripp, R.

Other elements by semi-quantitative spectrographic. Analysts: Curry, J., Martinez, L.

TABLE 2

Analyses of rocks, alteration zones and veins
Nabesna (B-4) quadrangle, Alaska

L, detected, but below limit of determination. N, not detected. G, greater than value shown. Limit of determination shown in parentheses under element.

	Concentration (ppm)										
Sample No.	Au (0.02)	Ag (0.5)	B (10)	Cr (5)	Cu (2)	Mo (2)	Ni (2)	Pb (10)	Sc (5)	V (5)	Zn (200)
AGG 010	L	5	L	500	20	L	70	L	30	200	N
AGG 011	0.9	N	N	150	150	15	50	100	30	200	L
AGG 021	L	N	L	5	100	N	7	L	30	300	L
AGG 026	L	L	N	70	50	N	L	L	10	30	N
AGG 027	L	1.5	30	70	70	7	70	15	20	150	L
AGG 028	L	7	150	10	100	7	100	70	15	150	200
AGG 029	L	N	L	200	70	N	7	L	15	150	L
AGG 032	L	N	10	300	10	N	5	L	10	150	N
AGG 093	L	N	20	7	500	N	L	50	50	500	N
AGG 094	1.6	70	70	10	20,000	N	1500	N	G(100)	15	700
AGG 095	L	N	30	30	500	L	30	L	70	500	N
AGG 098	L	N	L	N	70	N	L	L	30	70	L
AGG 099	L	N	N	70	20	N	50	L	70	700	N
AGG 133	L	N	N	20	20	N	15	N	10	100	N
AGG 135	L	N	30	7	70	N	10	N	20	200	N
AGG 136	L	N	30	10	200	N	10	N	15	300	N
AGG 137	L	N	10	20	70	N	10	L	30	200	N
AGG 206	L	N	L	20	70	N	10	L	15	150	N
AGG 323	L	N	70	300	50	L	100	L	30	300	N
AGG 324	L	N	30	300	70	L	70	15	20	150	L
AGG 325	L	N	L	200	300	5	70	L	30	300	N
AGG 337	L	N	30	70	20	N	30	15	15	150	N
AGG 338	L	N	30	70	20	N	30	15	15	150	N
AGG 339	L	N	L	100	70	N	30	10	20	150	N
AGG 340	L	N	N	150	20	15	50	30	15	150	N
AGG 383	.02	0.7	10	30	700	N	20	N	20	300	N
AGG 384	N	N	10	30	70	N	20	N	20	300	N
AGG 385	N	N	L	15	150	N	10	N	10	100	N
AGG 400	L	N	50	15	7	20	15	10	7	70	N
AGG 401	L	N	15	20	10	N	15	10	5	70	N
AGG 402	L	0.5	50	10	30	N	L	10	L	20	N
AGG 403	L	0.7	20	100	30	N	70	10	20	150	N
AGG 404	L	N	20	50	10	N	20	L	5	50	N
AGG 405	L	N	15	50	5	N	50	L	7	100	N
AGG 406	L	N	10	30	L	N	20	10	7	100	N

Gold by atomic absorption. Analysts: Meier, A., Miller, R., Tripp, R. ,Frisken, J.G.

Other elements by semi-quantitative spectrographic. Analysts: Curry, J., Martinez, L. Sellms, D., Watts, K. C.

DESCRIPTION OF SAMPLES

Sample No.	Description:
AGG 010	2-foot channel sample across limonite-bearing calcite vein.
AGG 011	Random chip sample of pyritized andesite volcanics.
AGG 021	Random chip sample of hornblende diorite.
AGG 026	Random chip sample of K-spar rich diorite.
AGG 027	Random chip sample of limonite-stained limestone.
AGG 028	Random chip sample of limonite-stained limestone at contact of gabbro.
AGG 029	Grab sample of argillized diorite in fault zone.
AGG 032	Grab sample of argillized and chloritized diorite in fault zone.
AGG 093	Chip sample across 15 feet of fault gouge with pyrite-bearing quartz veins.
AGG 094	Grab sample of pyrrhotite-chalcopyrite-actinolite-garnet boulder.
AGG 095	Chip sample across 5 feet of argillized and pyritized diorite.
AGG 098	Random chip sample of volcanic tuff.
AGG 099	Chip sample across 30 feet of pyritized and hornfelsed sediments.
AGG 133	Grab sample of biotite-hornblende-plagioclase porphyry.
AGG 135	Grab sample of contact zone between hornblende-plagioclase porphyry and biotite-quartz diorite.
AGG 136	Grab sample of biotite-quartz diorite with disseminated chalcopyrite.
AGG 137	Grab sample of massive actinolite-epidote tactite.
AGG 206	Grab sample of granodiorite.
AGG 323	Random chip sample of limonite-stained argillite.
AGG 324	Random chip sample of limonite-stained silty limestone.
AGG 325	Grab sample of pyritized hornblende diorite.
AGG 337	Random chip sample of limonite-stained argillite.
AGG 338	Random chip sample of limonite-stained argillite-graywacke.

Sample No.	Description:
AGG 339	Grab sample of limonite-stained thin bedded limestone float.
AGG 340	Random chip sample of limonite-stained limestone.
AGG 383	Random chip sample of feldspar-porphyry dike with traces of sulfides.
AGG 384	Random chip sample of barren feldspar porphyry dike.
AGG 385	Random chip sample of calcite veinlets in feldspar porphyry dike.
AGG 400	Grab sample of limonite-stained porphyry.
AGG 401	Grab sample of argillized leucocratic quartz diorite.
AGG 402	Grab sample of pink aplite.
AGG 403	Grab sample of feldspar porphyry dike.
AGG 404	Grab sample of argillized and limonite-stained hornblende diorite.
AGG 405	Grab sample of feldspar-hornblende porphyry.
AGG 406	Grab sample of limonite-stained feldspar-hornblende porphyry.

NOTES

Nabesna B-4 quadrangle, Alaska

(1) In all analyses, with the exception of gold, the results are reported to the nearest number in the series 1, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, etc.

(2) Elements are considered anomalous if they are present in concentrations greater than 3 times mean background. With the exception of amygdaloidal basalt terrane, mean background in the area (Richter and Matson, 1968) closely approximates average crustal abundance, i.e., copper, 55 ppm; lead, 12.5 ppm; zinc, 70 ppm; molybdenum, 1.5 ppm. Background concentrations for copper and certain other elements in amygdaloidal basalt terrane are considerably higher than crustal average, hence samples 019, 025, 030, 034, 166, 223, 250 and 252 with copper contents of 150 to 200 ppm are not considered anomalous.

(3) Reference; Richter, D. H. and Matson, N. A., Jr., 1968, Distribution of gold and some base metals in the Slana area, eastern Alaska Range, Alaska: U.S. Geol. Survey Circ. 593.